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A

TREATISE

ON

FEBRILE DISEASES,

MEDICAL SOCIETY OF LONDON
Established
1773
11 CHANDOS ST. CAVENDISH SQ. W.

INCLUDING

INTERMITTING, REMITTING, AND CONTINUED FEVERS; ERUPTIVE FEVERS; INFLAMMATIONS; HEMORRHAGIES; AND THE PROFLUVIA;

IN WHICH AN ATTEMPT IS MADE

TO PRESENT, AT ONE VIEW, WHATEVER, IN THE PRESENT STATE OF MEDICINE, IT IS REQUISITE FOR THE PHYSICIAN TO KNOW

RESPECTING THE

SYMPTOMS, CAUSES, AND CURE

OF

THOSE DISEASES.

BY

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FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, EDINBURGH, &c.

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CONTENTS.

Page

PREFACE, - - - - xi

CHAP. V.

Of the Varieties of Continued Fever, 1

SECT. I.

Of the Petechial Fever, - 2

SECT. II.

Of the Miliary Fever, - - 4

1. *Of the Symptoms of the Miliary Fever,* - - 5

Of the Miliary Eruption, ib.

Of the Symptoms which precede or attend the Miliary Eruption, 8

Of the Febrile States in which the Miliary Eruption most frequently appears, - 12

2. *Of the Causes of the Miliary Eruption,* - - 17

3. *Of the Treatment of the Miliary Fever,* - - 26

SECT.

SECT. III.

Page
Of the Aphthous Fever, - 42
1. *Of the Symptoms of the Aphthous Fever,* - 43
Of the Aphthous Eruption, ib.
Of the Symptoms preceding and accompanying Aphthæ, 62
Of the Febrile States in which Aphthæ most frequently appear, - - 65
2. *Of the Causes of Aphthæ,* 72
3. *Of the Treatment of the Aphthous Fever,* - - 78

SECT. IV.

Of the Vesicular Fever,
1. *Of the Symptoms of the Vesicular Fever,* - 111
Of the Vesicular Eruption, ib.
Of the Symptoms preceding and attending the Vesicular Eruption, - - 118
Of the Febrile States in which the Vesicular Eruption most frequently appears, 119
2. *Of the Causes of the Vesicular Eruption,* - 120
3. *Of the Treatment of the Vesicular Fever,* - 124

SECT.

SECT. V.

Page
Of the Erysipelatous Fever, - 127
1. *Of the Symptoms of the Erysipelatous Fever,* - 129
Of the Erysipelatous Eruption, ib.
Of the Symptoms which precede or attend the Erysipelatous Eruption, - - 143
Of the Febrile States in which the Erysipelatous Eruption most frequently appears, 146
2. *Of the Causes of the Erysipelatous Eruption,* - 158
3. *Of the Treatment of the Erysipelatous Fever,* - 165

BOOK III.

Of the Exanthemata, - - 175

CHAP. I.

Of the Small-pox, - - 177

SECT. I.

Of the Symptoms of Small-pox, 183
1. *Of the Symptoms of the Distinct Small-pox,* - ib.
2. *Of the Symptoms of the Confluent Small-pox,* - 199

Page

3. *Parallel of the Symptoms of Distinct and Confluent Small-pox,* - - 208

4. *Of the Symptoms of Anomalous Small-pox,* - 216

SECT. II.

Of the Causes of Small-pox, - 233

Of Inoculation, - - 238

1. *Of the Choice of proper Matter, and the Mode of performing the Operation,* - - 244

2. *Of the State of Body in which Inoculation proves most successful; and the Treatment of the Patient before and after the Operation till the Appearance of the Eruptive Fever,* - - 255

3. *Of the Cautions to be employed in the Practice of Inoculation, to prevent the Introduction of the Casual Small-pox,* 274

Of the Cow-pox, - - 292

SECT. III.

Of the Morbid Appearances on Dissection in Small-pox, - - 307

SECT.

SECT. IV.

Page
Of the Treatment of Small-pox, 313
1. *Of the Treatment of Distinct Small-pox,* - - 314
2. *Of the Treatment of Confluent Small-pox,* - 339
Of the Treatment of Anomalous Symptoms, - 355

CHAP. II.

Of the Chicken-pox, - - 374

SECT. I.

Of the Symptoms of Chicken-pox, 375

SECT. II.

Of the Causes of Chicken-pox, 379

SECT. III.

Of the Treatment of Chicken-pox, 380

CHAP. III.

Of the Measles, - - 381

SECT. I.

Of the Symptoms of Measles, 385
1. *Of the Symptoms of Regular Measles,* - - 386
2. *Of the Symptoms of Irregular Measles,* - - 402

SECT. II.

Of the Appearances on Dissection, Page 415

SECT. III.

Of the Causes of Measles, - 418

SECT. IV.

Of the Treatment of Measles, 424

Of the Treatment of Regular Measles, - - ib.

Of the Treatment of Irregular Measles, - - 434

CHAP. IV.

Of the Scarlet Fever, - 441

SECT. I.

Of the Symptoms of Scarlet Fever, 445

SECT. II.

Of the Causes of Scarlet Fever, 466

SECT. III.

Of the Treatment of Scarlet Fever, 472

CHAP. V.

Of the Plague, - - 475

SECT. I.

Of the Pestilential Eruptions, 479

SECT.

Page
1. *Of Pestilential Buboes,* 479
2. *Of Carbuncles,* - 488
3. *Of the other Pestilential Eruptions,* - - 498

SECT. II.

Of the other Symptoms of the Plague, 503

SECT. III.

Of the Causes of the Plague, 537

SECT. IV.

Of the Treatment of the Plague, 549

CHAP. VI.

Of the Urticaria, - - 564

SECT. I.

Of the Symptoms of the Urticaria, 565

SECT. II.

Of the Causes of the Urticaria, 567

SECT III.

Of the Treatment of the Urticaria, 568

ERRATA.

As the Author was deprived of an Opportunity of superintending the press, the reader he hopes will excuse the following errors, and take the trouble to correct them with the pen.

Page 3, l. 21, after *wine*, insert *sulphuric acid*; l. 12, for , r. ;
15, l. 8, after *eruption*, insert *it has just been observed.*
28, l. 21, for *notices*, r. *remarks.*
24, l. 21, dele *the.*
28, l. 23, for *this*, r. *the.*
35, l. 16, after *not*, insert *at.*
55, l. 6, for *are*, r. *is.*
64, l. 23, for , r. ;
94, l. 18, dele *indeed*; l. 22, before *never*, insert *almost.*
101, l. 25, for *milaria*, r. *miliaria.*
103, l. 10, for *power*, r. *powder.*
107, l. 10, dele *even*; l. 20, before *tertio*, insert *aut.*
109, l. 1, for *greatly*, r. *generally.*
115, l. 23, for *vesicle*, r. *vesicles.*
134, l. 26, for *disease*, r. *diseases.*
155, l. 7, for *phlegmasiæ*, r. *phlegmasia.*
163, l. 5, before *attends*, insert *it sometimes*; l. 20, for , r. ;
l. 22, for , r. ;
168, l. 9, for *pyrexiæ*, r. *pyrexia.*
179, l. 10, dele *of.*
197, l. 7, dele ,
209, l. 18, for *that*, r. *than.*
230, l. 26, dele *s* in *eruptions.*
233, l. last but one, for *Ahron*, r. *Aahron.*
239, l. 6, for *prove*, r. *proves.*
257, l. 1, after *time*, insert *as two years.*
259, l. 17, for *they both*, r. *both patients.*
264, l. 5, dele *out*; l. 15, before *till*, insert *and.*
270, l. 16, for *epidemics* r. *diseases.*
302, l. 2, for *would*, r. *should.*
309, l. 19, for *covered*, r. *lined.*
311, l. 3, for *the effects of*, r. *connected with.*
358, l. 14, for *hand*, r. *hands.*
381, l. 13, for *et*, r. *and.*
385, l. 7, for *most*, r. *many.*
414, l. 10, *Even* should begin a paragraph; l. 11, dele *other.*
457, l. 9, dele *it.*
478, l. 9, for *It*, r. *This symptom.*
301, l. 23, for *portion*, r. *proportion.*
545, l. 21, dele *not.*

PREFACE.

WHILE I acknowledge the liberality and indulgence which the preceding volume has experienced from those who have taken the trouble to notice it publicly, the reader I hope will excuse the egotism of the following observations, since, at the same time that they tend to vindicate me from some charges, not I hope of a very serious nature, they will serve farther to illustrate the design of the present undertaking.

My manner of treating the subject, it has been said, is too diffuse, and my collection of facts too copious. To peruse five such volumes, it is maintained, would be nearly as laborious as to peruse the original writers. Can this observation be made by one who has perused these writers!! But the intention of this publication is not merely to obviate the necessity of perusing the original writers, but what is a far more difficult

difficult task, of comparing them together and arriving at the result.

"Life," it is said, "is short, and we have "so many things to learn, that it is incum- "bent on authors to give their sense in as "few words as possible." Life, it is true, is short, and we have much to learn, but it is not those who attempt to learn most, who learn to most purpose; and on reflection it will perhaps be admitted, that he who intends to practise medicine will not have mispent his time, if after the perusal of five times five octavo volumes, he is tolerably acquainted with febrile diseases. When it is recollected that the Treatise in question is not merely an introduction, but an attempt to present at one view nearly the sum of what is known on the subject, and that a work of this nature must be adapted to those who are imperfectly or not at all acquainted with medicine, it may appear, I am afraid, that in many instances I have aimed too much at conciseness.

I have been accused of theorising. To this charge I shall only answer by asking any one who has taken the trouble to peruse the

the volume, if there is one page of it devoted to theory, except for the examination of prevalent opinions, the omission of which would have rendered a work of this nature extremely imperfect. With respect to the last section of the chapter on the Proximate Cause; I have there only laid before the reader an arrangement of facts.

I have done nothing, it is said, towards ascertaining the proximate cause of fever. I did not attempt to do much. It appears, as far as I can judge, from the observations alluded to, that fever is not owing to any change induced on the fluids, their becoming too acrimonious, too viscid, &c.; nor to any change in the state of the simple solid; nor to a partial change in that of the living solid, such as relaxation or spasm of particular parts; nor to any exhaustion or accumulation of the excitability, (these as far as I know are the only rational opinions which have been maintained on the subject); but to the laws of excitability being changed not in any one, but in every part of the living solid, and equally changed in every part of it, in consequence of which the natural

tural agents no longer produce moderate excitement followed by exhaustion, but atony or that degree of excitement which is followed by atony. This much as far as I can judge is ascertained, as will appear more clearly I think from what I am about to say, and beyond this I did not attempt to go.

The Brunonian doctrines have been so warmly contested, and so frequently misstated, that I examined them with a degree of caution and minuteness, which would not otherwise have been necessary. And aware as I was of the hypothetical manner in which the proximate cause of fever had been treated by every other writer as well as Dr. Brown, it will be admitted, I hope, that I have not departed from a due degree of caution in any of my observations on this subject.

With all the care I was capable of however, I have not succeeded in conveying the same ideas to every reader. It has been stated by one, that I espouse the general principles of the Brunonian system; by another, that I admit no part of it but that which

which was admitted by all physicians, before Dr. Brown's Elements of Medicine appeared. By one, many of my objections to this system are regarded as invalid; by another, their validity is admitted, and I am censured for allowing it any merit at all. I am said by one to aim at extending the Brunonian system; by another, accused of attempting to bring about a coalition between the systems of Dr. Cullen and Dr. Brown, which the critic more justly than elegantly observes, is as hopeless a task as endeavouring to milk he-goats. What shall I say in answer to such contradictory objections? I shall only observe of the two last, that I am perfectly unconscious of having made either the one attempt or the other. All I have attempted is to give an accurate view of the Brunonian system, to separate the true from the false parts of it, and to arrange certain facts relating to the laws of excitability without reference to any system whatever. I shall here endeavour in a few words to place the result of what was said of the proximate cause of fever in a clearer point of view.

When

When a state of excessive excitement* or atony† exists independently of the continued application of some artificial agent; one of two changes must have taken place, either the quantity or quality of the natural agents or the state of the living solid is different from that which prevails in health. If it can be shewn that the state of the living solid remains the same, it follows that the deviation from health is owing to some change in the natural agents; if it can be proved that the state of these agents remains the same, it then follows, that the deviation from health is owing to some change in the state of the living solid. We may go a step farther; if it can be proved that some of the natural agents remain unchanged and yet produce effects different from those they produce in health, it not only follows that the state of the living solid is changed, but also that, if this change in the state of the living solid will account for the changes observed in the effects of other natural

* See the definition of excessive excitement, vol. i. p. 514.

† See the definition of atony, vol. i. p. 507.

agents,

agents, we are not in any degree to attribute such effects to a supposed change in these agents, there being no occasion for any such hypothesis to explain the phenomena.* In fever, many of the natural agents, caloric, food, light, noise, for example, evidently remain unchanged, the difference in their effects therefore is owing to a change in the state of the living solid. But this change is capable of accounting for the change we observe in the effects of those agents whose condition we cannot with precision ascertain, the circulating and other fluids. It follows therefore, that whatever change may take place in these during the progress of fever, and however this change may modify the symptoms of fever,† too great lentor, acrimony, or other morbid condition of the fluids, is not the proximate cause of fever.

With respect to the hypothesis of fever depending on a change in the state of the simple solid. As the natural agents act not on the simple but on the living solid, it is necessary to suppose a change in the state

* See vol. i. p. 529.

† See vol. i. p. 533, 534.

of the latter; and as this change accounts for the phenomena of fever, there is no occasion for any other supposition.*

And farther, as all the natural agents excite a morbid action, and as this effect is not confined to any one, but observed equally in every part of the system, what room is there for supposing that any one part is more particularly affected than every other?†

Lastly with regard to fever being a state of accumulated or exhausted excitability in the sense in which Dr. Brown uses these terms, it is only necessary to refer to the facts which prove that no such morbid states exist.‡ It is true that the phenomena of synocha are such as we should expect from an accumulation of excitability; but will a surfeit or an excessive quantity of distilled spirits, frequent causes of synocha, occasion an accumulation of excitability? It appears then, that in fever the living solid is so changed, that a change is effected in the laws of its excitability, and that this admitted, there is no occasion for any of the

* See vol. i. p. 533.

† See vol. i. p. 458, 459, 460.

‡ See vol. i. p. 499, 500.

foregoing

foregoing hypotheses to explain the phenomena essential to fever.* Upon the whole then the following, as far as it goes, would appear to be a just view of the nature of fever.

Every agent acting on the system in general is capable of producing three effects, moderate excitement,† excessive excitement, or atony, according to the degree in which it is applied. The first operation of agents constitutes health; the two last general disease,‡ which has been called fever. If, by the application of artificial, or the excessive application of natural, agents, either of the two last states be maintained for a sufficient length of time, the living solid is so changed, that is, such a habit is formed, that the natural agents applied in the usual degree produce the same morbid effects till the diseased habit has been counteracted; which, as in the case of other habits, is the more easily effected, the

* See vol. i. p. 530, et seq.

† See the definition of moderate excitement in vol. i, p. 508.

‡ See the definition of general disease, vol. i, p. 523, 527, 528.

shorter

shorter its duration has been. Hence it is that almost any thing making a strong impression will sometimes remove fever at an early period; and hence the difficulty of removing a fever is generally proportioned to the time it has lasted. The means which cure a fever at an early period, that is, produce a crisis, seem either to expel the offending cause before the morbid habit is effected, as vomiting during a fit of drunkenness; or break the morbid habit before it has gained force, as cold-bathing during the first days of fever. In a more advanced stage, as the morbid habit is corrected with more difficulty, it is corrected more slowly. When in synocha we succeed in changing excessive into moderate excitement,* *h. e.* into that excitement which is followed by exhaustion, we have removed the morbid habit, and consequently cured the fever. The cure of synocha therefore depends on the abstraction of stimuli. But as atony is the consequence of excessive excitement, if excessive excitement has lasted for a considerable length of time, atony will always be evident previous

* See vol. i, p. 526.

to

to the restoration of health. Hence it is, that the symptoms of typhus succeed those of synocha. When we succeed in changing atony into moderate excitement, * we have corrected the morbid habit, and consequently cured the fever. The cure of typhus therefore depends on the addition of stimuli.

I have been indirectly accused of having ascribed too much importance to the study of nosology. It is fashionable at present to regard nosology as a very useless branch of medicine. Will the knowledge of a nosological system, it is said, enable you to cure a disease? It certainly will not, but it greatly assists in acquiring the knowledge that will. Let those who slight the labours of the nosologist, recollect that it is his province to point out the symptoms which distinguish one disease from another, and to arrange diseases in such a way as may best shew their affinity, and consequently assist the memory in recollecting their modes of treatment. The anatomist detects the changes induced by internal disease; but of what use would this knowledge

* See vol. i, p. 525.

prove,

prove, did not the nosologist point out the means of ascertaining the presence of such morbid states previous to death. In vain might the chemist and botanist supply us with medicines, did not the nosologist enable us to distinguish the cases in which they are useful.*

It has been asserted, that the practice of medicine would be improved by attending to symptoms individually, without attempting to ascertain their various combinations, and applying to these combinations particular names. Those who make this assertion maintain, and if the assertion is true, justly maintain, that nosology is an useless study. Is the assertion true? Does any symptom at all times require the same mode of treatment? Nay, is not the same symptom in one case salutary, in another pernicious? We must therefore be influenced in treating each symptom by an attention to those which accompany it, that is, an attention to the combinations of symptoms is necessary, and consequently nosology of the first importance. By far the greater number of

* See the 20th and 21st pages of the Preface to the first volume.

mistakes

mistakes I have witnessed in practice, have originated from the neglect of nosology. It often happens that an opinion, at first maintained on no other account than its singularity, becomes current among those who are unable, or will not be at the trouble, to think for themselves. Many exclaim against nosology, but cannot tell why. The truth is, an accurate knowledge of it is acquired with difficulty, and the indolent are glad of an apology for neglecting it altogether.

Having experienced so many instances of indulgence, I am wrong perhaps to notice some in which the preceding volume has been unfairly censured. I have been accused of inaccuracy in point of arrangement, but the only instance adduced is one for which I apologised, and for the admission of which I offered my reasons. The inaccuracy is commented upon, but the apology is unnoticed. The definition of atonics, it is said, is not *luculent*. "Atonics "are those agents which produce atony." As thus quoted by the critic, it is indeed far from luculent. He neglects to mention that the definition of atony precedes that of atonics, on the precision of which it depends

depends whether the definition of atonics is luculent or not. A few similar instances I omit to mention.

Contrary to my first intention, the present volume includes all the species of eruptive fevers, and consequently finishes the first part of the work, comprehending idiopathic fevers. The two volumes now published therefore form a Treatise on Idiopathic Fevers, and may be regarded as independent of those which are to follow.

The Symptomatic Fevers will form the three remaining volumes. In the first of which, that is, the third volume of the work, the inflammations of the skin, head, and neck, will be considered; in the fourth, those of the thoracic and abdominal viscera, and of the joints. The last volume will comprehend the hemorrhagies and profluvia, with a more detailed view of the nosology of febrile diseases.

It is my intention when the present work is finished to commence another, (which will consist of two volumes, and for which the materials are already collected) on the Nervous Complaints most frequently complicated with Febrile Diseases.

A

CHAP. V.

Of the Varieties of Continued Fever.

CONTINUED fever, or, as it has been termed, Synochus, is divided into five varieties; the Synochus Simplex, that which is not accompanied by any eruption, the Synochus Petechialis, the Synochus Miliaris, the Synochus Aphthosus, the Synochus Erysipelatosus, and the Synochus Vesicularis.

The symptoms, causes, and treatment of the synochus simplex have been considered. I am now to point out the circumstances in which the other varieties of synochus differ from this.

SECT. I.

Of the Petechial Fever.

THE Synochus Petechialis may be defined, Synochus, incerto morbi die, plerumque post varia debilitatis signa, apparent maculæ parvæ, rubræ, circulares, minime eminentes, per cutem, præcipue colli et pectoris, sparsæ.

There is little to be added to what was said in the first volume of this variety of synochus. Petechiæ* seldom appear in the first, very frequently in the second, stage of synochus (the typhus). They are most apt to appear when there is a tendency to the hemorrhagies characteristic of this species of fever.

This eruption appears in other complaints besides fever, particularly in scurvy, and sometimes supervenes without any previous disease. But wherever it appears, we still

* See Petechiæ described in the first volume.

find

find it accompanied with a tendency to the worst forms of hemorrhagy.

All that is known of its causes is, that whatever debilitates, disposes to it. It nevertheless now and then shews itself where the excitement is considerable;* and on the other hand, we often meet with extreme debility in fevers, as well as other complaints, unattended by petechiæ.

As petechiæ generally denote debility, their appearance in typhus indicates a strict attention to the invigorating plan; and antiphlogistic measures should be employed with caution when they shew themselves in synocha, which, however, rarely happens.

When petechiæ appear as an idiopathic affection, stimulants, and particularly those which are termed astringents, are most useful, the chief of which are the bark, port wine, and alum. It will be necessary to consider the other varieties of synochus at greater length.

* See Eller de Cognosc. et Cur. Morb. and Dr. Grant's Treatise on the Fevers most common in London.

SECT. II.

Of the Miliary Fever.

THE Miliary Fever is defined by Dr. Cullen,

"Synochus cum anxietate, frequenti sus-
"pirio, sudore olido, et punctionibus cutis.
"Incerto morbi die, erumpunt papulæ ru-
"bræ, exiguæ, discretæ, per totam cutem,
"præter faciem, crebræ, quarum apices,
"post unum vel alterum diem, pustulas
"minimas, albas, brevi manentes, osten-
"dunt."

It appears from what was said of the miliary fever in the introduction, that it is to be regarded only as a variety of synochus, characterized by a particular eruption and a certain train of symptoms which attends that eruption, whether it appears in fever or other diseases. In laying down the symptoms then of what has been termed Miliary Fever, it will be the most distinct plan, in the first place, to describe the eruption; secondly, to enumerate the symptoms which generally precede or attend it; and lastly,

lastly, to point out the febrile states in which it is most apt to shew itself.

1. Of the Symptoms of the Miliary Fever.

Of the Miliary Eruption.

The first appearance of this eruption is sometimes a roughness of the skin, resembling that produced by cold; soon after which, or without having been preceded by this appearance, a number of small red pustules shew themselves, about the size of millet seeds, from which they are termed miliary. They often lose their redness, and appear of the ordinary colour of the skin. Their prominence is so inconsiderable that it can scarcely be seen; to the touch it is always sufficiently evident. For the most part they are distinct, but now and then appear in clusters. After they have remained for ten or twelve hours, sometimes longer, a small vesicle appears on the top of each, which at first is of a whey colour, but soon after becomes white. *

Such

* The matter of the pustules at first appearing of a whey colour and afterwards white has given rise to

Such is the appearance of the white miliary eruption, and the red only differs from it in the pustules retaining their red colour, and the matter formed in them being yellow.

In two or three days the vesicles break, if they have not been rubbed off, and in either case are succeeded by small crusts, which fall off in scales.

The miliary eruption generally first appears about the neck and breast, gradually spreading to the trunk and extremities, but rarely appearing on the face. The white and red eruptions generally appear separately; sometimes however they are intermixed. In both, the matter formed in the vesicles, like the sweat which we shall find constantly attends this eruption, has an offensive smell, and, it is said, a very acrid taste.

The miliary, like other symptomatic

a very improper division of the white miliary eruption into pellucid and white. See the 388th paragraph of Burserius's Institut. Med. Pract. where the reader may also see some other divisions of the miliary eruption which are equally useless.

eruptions,

eruptions, often appears repeatedly in the course of the disease, and it is not uncommon for one crop immediately to succeed another for many days; new pustules appearing while the former advance to maturation and decline.

We are assisted in forming the prognosis in Synochus Miliaris, by the appearances of the eruption. The red generally indicates a milder disease than the white; and it is frequently observed, that the greater the inflammation that attends the eruption, the better is the prognosis. "Exanthemata rubra," Dr. Mead * observes of this eruption, "minus periculum afferunt quam albida, "illaque quo vividiora perstant, eo sunt "tutiora." Quarin however remarks, that both kinds of miliary eruption appearing at the same time indicates a worse disease than either singly. It has been observed, that a very numerous eruption indicates more danger than a scanty one. † The eruption being steady is more favourable than its frequently disappearing and coming

* Monita et Præcepta Medica.

† Quarin.

out again;* and it is more favourable when the places covered with the eruption appear swelled and stretched, than when they remain flaccid.

The prominence of this eruption sufficiently distinguishes it from petechiæ. The circumstances which distinguish it from other eruptions will be pointed out as we proceed in describing those eruptions.†

Of the Symptoms which precede or attend the Miliary Eruption.

It is not uncommon for the symptoms of febrile diseases, a short time before the miliary eruption shews itself, to suffer an evident exacerbation, which appears chiefly in an increase of temperature and restlessness. The eruption is generally preceded by oppression, and a sense of tightness about the præcordia, the breathing becomes laborious and interrupted with sighing or a cough,‡

* Burserius.

† The white miliary eruption has been termed purpura alba; the red, purpura rubra.

‡ Quarin.

while

while the spirits are oppressed with sadness and timidity.

With the increase of temperature, there is generally a sense of pricking and itching in the skin, which is also sometimes felt in the bowels,* now and then accompanied with a degree of numbness in the extremities, particularly in the fingers ;† and for sometime before the eruption comes out, the patient is frequently bathed in a profuse sweat of a sour rank odour, during which, Allionius observes, there is a contracted pulse.

There are other symptoms, which, though less constantly, are sometimes observed to precede this eruption. The dejection is often attended with pains of the head or internal ear, and tinnitus aurium, now and then with delirium. The eruption is sometimes preceded by pains in the back, limbs, and loins, ‡ and, in some cases, by a pungent heat referred to the back. § Before the

* Vogel.

† Allionius. Vogel. ‡ Quarin. Vogel.

§ Hoffman observes, that a pungent heat in the back is often a sign that the miliary eruption is about to appear.

miliary

miliary eruption appears, the belly now and then swells and becomes tense, the whole face is swelled and red, * and the eyes inflamed or watery. † The internal fauces also are frequently inflamed, and there is sometimes a considerable flow of saliva. In many cases the miliary eruption is preceded by that of aphthæ; between which and this eruption there is often, we shall find, an evident connection. Like most other eruptions, the miliary is sometimes, though very rarely, preceded by an epileptic fit. ‡

Upon the whole, dejection of spirits and anxiety, with unusually fetid sweats, are the most common forerunners of the miliary eruption.

Most of the foregoing symptoms are usually relieved on its appearance. The sweating however, if means are not used to check it, generally continues, and then fresh crops of the eruption will probably continue to come out for many days.

* Burserius. † Quarin.

‡ Burserius.

The

The more severe the preceding symptoms, and particularly the greater the debility and depression of spirits, the more unfavorable is the prognosis. If the sweat is moderate, Vogel observes, and the respiration not oppressed, the prognosis is good. A degree of itchiness, instead of the sense of pricking, on the coming out of the eruption, has been regarded as unfavorable.*

Such are the symptoms, more or fewer of which precede and attend the miliary eruption in whatever kind of fever it makes its appearance, and even when it is unaccompanied by fever of any kind. The miliary eruption, says Burserius, may appear without being attended by fever, but it is still preceded by the same restlessness, sickness, and anxiety. When the miliary eruption, Hoffman observes, appears as a chronic complaint, unattended by fever, it is almost always accompanied with a copious excretion of thin serum by sweat or urine, sometimes by spitting, and sometimes by watery stools.

* Burserius.

The

The red miliary eruption, the rash as it is vulgarly termed, appears unaccompanied by fever more frequently than the white. "The miliary glands of the skin," Huxham remarks, "appear very turgid, and mimic "a rash upon profuse sweating, even in "the most healthy." The white however, as well as the red, now and then appears without fever.*

Of the Febrile States in which the Miliary Eruption most frequently appears.

It is when debility prevails that the miliary eruption is most apt to shew itself. The robust and sanguine, Quarin observes, are rarely seized with the miliary fever, but in them it is most dangerous. That species of synochus therefore, in which typhus forms the principal part of the complaint, is most frequently accompanied with this eruption; and in the works of those who treat of the miliary fever as a distinct disease, and consequently endeavour to point out its characteristic symp-

* See Mr. White on the Diseases of Lying-in Women, and other writers on Miliary Fever.

toms,

toms, those are enumerated which have been mentioned as attending this species of synochus.

The cold stage, it has been observed, is generally very evident, often attended with considerable langour and depression of spirits, which sometimes, Hoffman remarks, proceeds to syncope. The pulse during the chills is for the most part very small and weak; after the heat is generally diffused, it becomes stronger and fuller; but never, it is observed, acquires a great degree of strength, and generally in a few days becomes small, soft, and depressed. The various symptoms denoting much debility, such as tremors, cramps, subsultus tendinum, delirium, &c. enumerated among the symptoms of typhus, have been regarded as characteristic of this fever. When we consider the nature of the fever in which this eruption generally appears, the irritation of the eruption, and the profuse sweats which attend it, it will not appear surprising that these symptoms very frequently accompany the Synochus Miliaris.

Such is the complaint which has been termed

termed the Miliary Fever. In what does it differ from other cases of typhus, except in the eruption and certain symptoms connected with it, which, as will be evident in considering its causes, are accidental appearances, that may often be prevented by a proper mode of treatment?

Some alledge that the miliary eruption generally shews itself on a certain day of the fever, demonstrating an essential connection between the fever and eruption. Allionius says that it appears on the third or fourth day; Huxham says it appears on the seventh, ninth, or eleventh day; and other days are mentioned by other writers; from which it is sufficiently evident, and practitioners indeed now admit, that it may appear on any day of the fever; it is not common however for it to appear before the third or fourth day, probably because the debility is seldom considerable before this period.

The foregoing observations apply chiefly to the white miliary eruption, the form in which it generally appears in typhus. The red is a slighter affection, and often appears in

in synocha. When the red miliary eruption appears, Lobb * observes, the pulse is commonly strong, the tongue dry, and the febrile heat great. Even in this case however, the eruption is generally attended with oppression and sinking of the spirits.

The symptoms connected with the miliary eruption for the most part suffer a remission on its appearance, and in some instances it also relieves the febrile symptoms; † in general however the miliary eruption, and the sweats and other symptoms that attend it, only increase the debility, and we shall find that they are always if possible to be prevented. An increase of the symptoms of

* See his Practice of Physic.

† Quarin observes, that it is chiefly in catarrhal and rheumatic fever that the miliary eruption brings relief. We shall afterwards find that sweats, however induced, more frequently bring relief in these, than in most other febrile diseases. But Planchon (in his Dissertation sur la Fievre Miliaire) justly remarks, that when this eruption does relieve the febrile symptoms, the favorable change is not to be depended on, the symptoms often returning with equal and sometimes greater violence.

debility

debility, on the coming out of the eruption, affords an unfavorable prognosis; but the prognosis is still worse, if such symptoms shew themselves or suffer a considerable exacerbation on its sudden disappearance. When in this case, excessive anxiety and dejection, obstinate vomiting, delirium or convulsions supervene, the danger is very great; and if we do not soon succeed in removing such symptoms, death is to be regarded as almost inevitable.

Dropsical swellings of the legs and sometimes of the belly have been observed frequently to supervene on miliary fevers, and are regarded by some as part of the complaint; they seem however merely the consequence of debility. For the most part as the patient gains strength, the swellings disappear without the assistance of medicine, especially if they are merely anasarcous. Any degree of ascites is always to be dreaded. In some cases they are suddenly removed by a spontaneous flow of sweat. We shall soon have occasion to consider a species of eruptive fever, almost uniformly succeeded

succeeded by anasarcous swellings, which are rarely attended with any danger.

From the great debility which prevails in the synochus miliaris, it is apt to be followed by the various consequences of protracted fevers, enumerated among the consequences of continued fever. See the observations of Vogel and Burserius on the consequences of the miliary fever.

2. Of the Causes of the Miliary Fever.

A fever, says Allionius,* which may be considered a new disease from the miliary eruption which attends it, in which, if the eruption subsides, the patient falls into convulsions and soon expires, appeared at Leipsic about the middle of the last century. And the generality of writers agree with Allionius, that the miliary fever which appeared at this place in the years 1652, 1653, and 1654, is the first fever of this kind of which we have any account. The eruption first shewed itself in that fever which frequently attacks women after

* See his Tractatio de Miliarium Origine, &c.

delivery, termed puerperal; but soon spread, and appeared in various fevers, attacking persons of every sex and age. "Ita ut," says Allionius, "pueros cum juvenibus, adultos cum senibus, viros cum fœminis, aggrediretur."

Many however doubt of the miliary fever having appeared at this period for the first time. "It seems to me very improbable," Dr. Cullen observes, "that this should have "been really a new disease when it was "first considered as such; there appear to me "very clear traces of it in authors who "wrote long before that period, and if "there were not, we know that the descrip- "tions of the ancients were inaccurate and "imperfect, particularly with respect to cuta- "neous affections, whilst we know also very "well that those affections which usually are "symptomatic were commonly neglected "or confounded together under a general "appellation." Burserius thinks, that the miliary eruption has been confounded with petechiæ by some of the older writers; and Mr. White, in his Treatise on Pregnant and Lying-in Women, observes, that it is highly probable,

probable, if not certain, that the miliary fever has occurred to practitioners ever since the days of Hippocrates. The reader will find, in Planchon's Treatise sur la Fievre Miliaire, quotations from Hippocrates and Ætius, to prove that the miliary fever was known to these authors. This dispute is of little moment.

In speaking of the causes of synochus miliaris, we must take the same view of the complaint as in enumerating its symptoms, endeavouring to trace the causes, not of the fever, but of the eruption which attends it.

There is no symptom which more constantly attends the miliary eruption than sweating, and the causes of both are often the same; thus it frequently happens in the same epidemic, that in those treated with the cool regimen no sweat appears, and the eruption is prevented; while in others, treated with the hot regimen, sweats are forced out, and the eruption soon makes its appearance. Sweating indeed is so frequently accompanied with this eruption in febrile diseases, that some assert we may in-

duce it in any fever, if we force out sweats by keeping the patient warm, and obliging him to swallow heating medicines.* Dr. Cullen considers the miliary eruption merely as a disease of the skin, produced by heat and forced sweats, and little connected with the general affection of the system; this opinion he thinks is further confirmed by the eruption never appearing on the face, although it affects every other part of the body, by its appearing chiefly on those parts which are most covered, and by its being possible to bring out the miliary eruption on particular parts by external applications.

It is certain however that in some fevers, as in the puerperal, it is more apt to appear than in others. It will be necessary therefore to inquire into the circumstances which predispose to its appearance.

* Even in the writings of foreign authors, who generally contend for the miliaria being an exanthema, and particularly in those of Vogel and Quarin, there is sufficient proof of the miliary eruption being generally the consequence of forcing out sweats by warmth and stimulating medicines.

"As this symptomatic affection," Dr. Cullen observes, "does not accompany "every instance of sweating, it may be "proper to inquire what are the circum-"stances which especially determine this "eruption to appear." "There is only one "observation," he remarks, "I can offer "to the purpose of this inquiry, and it is "that, of the persons sweating under febrile "diseases, those are especially liable to the "miliary eruption who have been previously "weakened by large evacuations, particularly "of blood." Quarin and others make the same observation; thus it is that lying-in women are more frequently atracked by it than others.

Those also who have laboured under frequent and copious menstruation or a long continued fluor albus, are frequent subjects of this complaint. It has often been remarked, that the miliary eruption is apt to appear in fevers arising from wounds, where the loss of blood has been considerable. But every debilitating cause, as well as loss of blood, predisposes to it. In lying-in women, Vogel observes, it often makes its

appearance before delivery. Not only every excessive discharge, but the interruption of any habitual discharge, such as that of the menses, even habitual costiveness, is ranked among its causes. A bad diet from a deficiency either in quantity or quality, or intemperance, predisposes to the miliary eruption; to the last cause, and also to excessive venery, it is attributed both by Hoffman and Planchon; even the debility produced by a damp atmosphere seems sufficient to give the predisposition. The miliary eruption, Quarin observes, is often endemic in marshy countries.

Persons of a lax habit of body, Hoffman remarks, and of a sanguine temperament, are more subject to it than others; children more than adults; old people than such as are in the vigour of life; women more than men; and in child-bed more than at other times. And those, he might have added, who have formerly laboured under the disease, are more subject to it than others.

Though these causes of the miliary fever, Hoffman continues, have always existed, the disease itself has made its appearance

pearance only of late years, since the introduction of tea and coffee, and it is chiefly among the drinkers of these that miliary fevers are frequent. I may observe, in confirmation of this remark, that I have repeatedly known fetid sweats, anxiety, and an intolerable sense of pricking in the skin, induced in dyspeptic people by drinking tea. Nor is this effect, as Hoffman supposes, to be ascribed to the warm water; for the same or even a much larger quantity of warm milk and water was not found to produce the same effects.

A variety of observations point out a striking connection between the appearance of the miliary eruption and the state of the stomach. Van Swieten, Quarin, and Zimmerman have all observed, that it is occasioned by an accumulation of irritating matter in the stomach; and Quarin even notices, that on evacuating such matter from the primæ viæ, he has observed the eruption immediately disappear; an observation which has not been sufficiently attended to. We shall find other eruptions, particularly the erysipelatous, equally con-

nected with the state of the primæ viæ. The necessity, Planchon observes, of clearing the primæ viæ in the miliary fever is pointed out by the nausea, vomiting, bitter taste in the mouth, furred tongue, fetid breath, and eructations, (all symptoms denoting derangement of the primæ viæ) which occur in the beginning of this fever. In another place, he observes that an intermitting pulse often attends the miliary eruption, indicating an accumulation of bile in the stomach and intestines.

All these, and other debilitating powers, should be regarded perhaps chiefly as predisposing causes, while the hot regimen is to be looked upon as the principal exciting cause of this eruption. At least we shall not err much by forming this opinion, since it is found, that whatever the state of the patient may be, the miliary eruption is very generally avoided by cool drink, and the exposure to cool air.

It is not to be denied however, that by the former set of causes, or others less known, the body is sometimes so predisposed to this eruption, that no attention to the

the cool regimen is capable of preventing its appearance. In spite of every thing that can be done, sweating sometimes supervenes, and is followed by the miliary eruption. In 1758, Quarin observes, this eruption was epidemic. Almost all that were confined to bed were seized with it, although the primæ viæ were cleared, the patients kept cool, and all heating medicines avoided. Van Swieten has also observed that the miliary eruption is sometimes epidemic, and both Stork * and Planchon † mention instances where this eruption occurred after every precaution had been used to prevent its appearance. Such cases however are rare.

Moist variable weather is most favourable to its appearance. It appears most frequently in spring, and more frequently in autumn than in winter or summer; winter is least favourable to its appearance.

The reader will find a variety of causes of miliary fever enumerated by authors, particularly by Burserius in the 2d vol. of

* Anni Medici.

† Sur la Fiev. Mil.

his

his Institut. Med. Pract. But these are rather the causes of the fevers in which this eruption most frequently appears, than of the eruption itself; such authors regarding the miliary fever as an idiopathic disease.

Some dispute has arisen concerning the contagious nature of the miliary fever, some asserting that it is always contagious, and others denying that it ever is so. The dispute could only have arisen from regarding it as an idiopathic disease. When it is known that the miliary eruption is an accidental appearance in all kinds of fever, the cause of this difference in opinion, and the means of reconciling it, are sufficiently apparent. It is one of the inconveniences which has arisen from a wrong view of the nature of the disease.

3. Of the Treatment of the Miliary Fever.

As what has been termed the miliary fever is nothing more than the occurrence of the miliary eruption with the peculiar symptoms that always attend it in continued fever, and as the treatment of continued fever

fever has already been considered, we have only at present to point out how far this treatment is influenced by the appearance of the miliary eruption.

When a sweat appears in any continued fever, especially where the debility is considerable, if the symptoms are not relieved by it, we have reason to fear that its continuance, among other bad effects, will induce the miliary eruption, with the anxiety, oppression, &c. that generally attend it.

Concerning the propriety of checking such sweats there can be no doubt. A dread of this practice, especially where there is particular reason to expect the miliary eruption, is expressed in the writings of a variety of authors. It seems however to have arisen less from cases in which they observed the bad effects of the practice, than from certain opinions respecting the eruption which, according to these writers, is the means employed by nature to throw out the morbific matter, from which they suppose the fever to arise.

The effects of the practice indeed fully warrant the assertion just made. Using proper

proper means to check sweats which do not relieve the symptoms, has never been attended with any bad consequence.

The most effectual means of checking sweat is the application of cold, and in many cases it is the best. But the employment of it requires some caution.

If the fever be typhus, in which however the increase of temperature is considerable, and steady, the application of cold may be free. The same may be said of synocha, if we have no reason to dread a tendency to local inflammation. In the synocha however, sweats rarely occur without relieving the symptoms. The application of cold requires much caution in the exquisitely formed typhus, where the temperature is little, if at all, above the natural degree. In such cases, attempting to diminish sweating by the application of cold, would often produce an alarming diminution of temperature. Here we must trust chiefly for moderating the sweating, a consequence of debility, to the means of invigorating the system, the best of which in this case are wine, bark, sulphuric acid, and alum.

When

When the propriety of applying cold to check the sweating is determined on, it should be applied gradually. The air of the bed-room should be cooled, part of the bed-clothes removed, the patient desired to lie with his arms bare, and allowed cold drink; by these means we at the same time avoid the miliary eruption, and check sweats which serve no purpose but that of diminishing the strength; for no salutary sweat ought to be checked, nor in such is the miliary eruption to be feared. "Whatever the miliary eruption may be, the "sweats which attend it," Mr. White observes, "are by no means critical."

When these means prove insufficient for checking the sweat, we must at the same time employ a gentle cathartic. An equal prejudice has prevailed against this practice, as against the last; and for similar reasons it is equally groundless. It appears from the foregoing observations respecting the connection between the state of the primæ viæ and the miliary eruption, that whereever we have reason to suspect the presence of irritating matter in these cavities, much

is

is to be expected from evacuating it, and consequently that a cathartic is particularly indicated. We should inquire therefore whether the patient feels a sense of weight about the stomach, whether the breath be offensive, whether he is troubled with head-ach, eructations, or nausea, swelling of the belly, or tormina.

When the stomach is oppressed, Quarin recommends diluents, and if these fail, an emetic. Much dilution however is evidently improper where we wish to avoid sweats; * emetics are doubly hurtful, by promoting the perspiration and increasing the debility, and should be avoided unless considerable advantage is to be expected from evacuating the stomach, as in cases where the eruption is evidently caused by the irritation of its contents. Mild cathartics in general answer much better the different indications in this case.

When it happens that notwithstanding our endeavours the sweat continues, and

* Hoffman cautions against the use of warm diluting liquors, unless the eruption has been repelled.

the

the miliary eruption appears, or, what more frequently happens, when the eruption has been induced by improper treatment, what mode of practice is to be adopted?

"But it may happen," Dr. Cullen observes, "when these precautions have been "neglected, or from other circumstances, "that a miliary eruption does actually ap- "pear, and the question will then be put, "how the case is to be treated. It is a "question of consequence, because I believe "that the matter here generated is often of "a virulent kind. It is frequently the off- "spring of putrescency, and when treated "by increasing the external heat of the body, it seems to acquire a virulence "which produces those symptoms mentioned "in the 719th paragraph, and proves cer- "tainly fatal.

"It has been an unhappy opinion with "most physicians, that eruptive diseases "were ready to be hurt by cold, and that "it was therefore necessary to cover up the "body very closely, so as thereby to in- "crease the external heat. We now know "that

" that it is a mistaken opinion, that increas-
" ing the external heat of the body is gene-
" rally mischievous, and that several erup-
" tions not only admit but require the ad-
" mission of cool air. We are now per-
" suaded, that the practice which formerly
" prevailed in the case of miliary eruptions
" of covering up the body close, and both
" by external means and internal remedies
" encouraging the sweating which accom-
" panies this eruption, was highly perni-
" cious, and commonly fatal. I am there-
" fore of opinion, even when a miliary
" eruption has appeared, that in all cases
" where the sweating is not manifestly cri-
" tical, we should employ all the several
" means of stopping it that are mentioned
" above, and I have sometimes had occasion
" to observe, that even the administration
" of cool air was safe and useful."

From the observations of other writers we might be inclined to infer, that however uniformly safe the application of cold previous to the appearance of the eruption may be, it is a more doubtful practice while

the

the eruption is present. Cases are recorded in which it did harm.*

But in these, the application of cold was unguarded, and the state of the patient such that sudden exposure to cold might have induced the same train of symptoms, had there been no eruption. Even those who saw the eruption repelled by cold, warn us against the more dangerous extreme of heat; for while an unguarded application of cold now and then proves hurtful, keeping the patient warm never fails to be so. On the first breaking out of the miliary fever amongst us, Hoffman observes, when it was treated with warm alexipharmics and a hot regimen, almost every one who was seized with it died, whereas by the temperate mode of treatment now pursued, numbers escape. While the older practitioners oppressed the patient with bed-clothes, they were not aware that the eruption may be repelled by

* The reader will find cases in which this eruption was repelled, and an alarming train of symptoms induced, by exposure to cold, mentioned by Hoffman and others.

whatever debilitates, and that much heat may have this effect, as well as imprudent exposure to cold. There is reason to believe indeed that the latter cause often produced the effect in consequence of the previous application of the former. * Delirium, subsultus tendinum, dyspnœa, anxiety, convulsions, and often death, says Burserius, is the consequence of repelling the miliary eruption, and this may be done, he adds, by too much heat or too free an exposure to cold, by keeping the patient too long in the erect posture, by violent affections of the mind, particularly by anger, terror, or grief. † Quarin and others make similar observations, and what sufficiently demonstrates that debility is a principal, perhaps the only cause of retrocession, is

* The retrocession of the eruption rarely happens when the cool regimen has been employed from the beginning of the complaint.

† If a sudden and copious evacuation follows the retrocession of the eruption, he observes, such as much sweating or copious diarrhœa, the bad effects are prevented. There is no eruption according to Burserius which is so readily repelled as the miliary.

that

that the various symptoms of debility which attend it, and which have been erroneously regarded as its consequences, in many cases precede it.*

Upon the whole then, it may be observed that the application of cold, while the sweat continues threatening the appearance of the eruption, should be as free as the symptoms of the fever admit of, and that we have reason to believe that the same observation applies to those cases, where the eruption is actually present.†

It appears from the foregoing observations, that it is in the typhus gravior where the debility is great, and the temperature little or not at all above the healthy degree, that the retrocession of the eruption is most to be feared, and the application of cold in such circumstances often induces the fore-

* See the observations of Planchon and others. Subsultus tendinum, syncope, convulsions, delirium, &c. Planchon observes, often shew themselves a short time before the eruption recedes.

† See what is said of the doctrine of repelled eruption in speaking of the treatment of the synochus aphthosus.

going train of symptoms, whether the miliary eruption be present or not.

Some of the medicines which have been termed refrigerant, tend to check sweat, and are therefore useful in the miliary fever. Acids, and the neutral salts composed of a fixed alkali and mineral acid, are best suited to this indication; those into the composition of which ammonia or vegetable acids enter, being too apt to promote perspiration. Nitre and other neutral salts however are not well suited to typhus. Acids in general, (and particularly the vitriolic) are employed with more advantage where the miliary eruption is to be feared.

Allionius, Hoffman, and others, forbid the use of acids in the miliary fever, for which the latter has been justly censured by Planchon and others. It is the worst of prejudices, says Quarin, which has instilled itself into the minds of some practitioners, that because the sweat in miliary fevers is acid, absorbents should be employed, and acids of every kind avoided.

It seems to be the same hypothesis that led to the exhibition of alkalis in the miliary fever.

fever.* The ammonia is that which has been most employed, and is often serviceable; but its good effects are rather to be attributed to its cordial than alkaline property.

With regard to saffron, castor, elder-flowers, milfoil, and many other such medicines, frequently recommended in miliary fever, they seem to be of little or no use, and as they tend to excite disgust and oppress the stomach, ought to be avoided.

When the miliary eruption brings no relief to the febrile symptoms, it may be regarded as the accession of a new disease, which combines its influence with the disease already present to reduce the patient's strength. Its appearance therefore renders necessary a strict adherence to the tonic plan; for the irritation of the miliary eruption, and the debilitating sweats which attend it, will even at an early period of the fever induce the symptoms of typhus; be-

* See this part of the subject considered at length by Burserius.

sides it has just been observed, that tonic medicines are sometimes the principal means of checking such sweats, and in this way they are always useful after the typhus has commenced; the sweating being often protracted by the debility it occasions. Opium however, from its tendency to promote perspiration, should be avoided. Tralles, in his work on opium, alledges that the miliary eruption may often be induced by the use of this medicine.

As the appearance of miliary eruption in continued fever renders the tonic plan more necessary, it follows as a consequence that it renders the opposite plan more pernicious. The bad effects of blood-letting and much purging in the miliary fever have often been observed, and they are ranked by the generality of authors among the principal causes of retrocession.

Without attending to the antiquated theories of repelled eruption, of this we are assured, that whatever debilitates, in most cases of miliary fever, is pernicious; whatever supports the vigour of system, beneficial.

ficial. It is not to be overlooked however that there are cases, where notwithstanding the sweatings and miliary eruption, the excitement is such as in all kinds of fever warrants blood-letting. In these cases the theory of retrocession deserves as little attention as in the former. In the one case we avoid blood-letting, because the excitement is already sufficiently low; in the other we employ it, because the excitement is such that its continuance would occasion a greater degree of debility than the blood-letting which relieves it; nor, reflecting on what has been said, need we fear that blood-letting in such circumstances will repel the eruption. It is determined by experience, says Burserius, that if while the miliary eruption is present, an inflammation of the viscera be feared, or if the fever be very vehement, a large blood-letting may be employed without repelling the eruption. Quarin and others make similar observations. Blood-letting, says Quarin, is particularly necessary in the miliary fever, when it has arisen from the abuse of spirituous liquors, or the

suppression of the lochia, that is, he might have added, where the excitement runs high. In such cases, however, the evacuation should be less in proportion to the excitement, than in cases of simple synochus.

Reviewing all that has been said we shall find, that the change which the appearance of the miliary eruption and the symptoms that attend it render proper in the treatment of synochus, consists in employing tonic remedies more liberally, and evacuations more sparingly, than in cases unattended by an eruption; the miliary eruption tending constantly to overcome excitement and produce debility. The nature of the complaint thus leads to the practice which experience has proved to be most successful. *

The

* In considering the treatment of the synochus miliaris I have taken no notice of blisters, which have been warmly recommended in this fever, as there is nothing to be added on this part of the subject to what was said in speaking of the treatment in the synochus simplex. It appears from what was then said, that their cordial property, for which they seem chiefly to have

The remedies which have been employed, when a retrocession of the eruption, attended by various symptoms of debility, happens, are the same as those recommended in similar circumstances in other eruptive fevers, and which we shall presently have occasion to consider more at length. In the disease before us, musk and camphire are particularly recommended where convulsions supervene; opium, blisters, and frictions of the skin, in all cases. But our principal view should be to bring out and support a sweat, and if the retrocession be followed by any considerable evacuation, we must be careful not to check it. Different means, it is evident, will be proper in different cases, according to the cause of the retrocession.* See what has been said of the causes of retrocession.

have been recommended in the miliary fever, is very inconsiderable.

* Quarin thinks that the retrocession is the more dangerous the more copious the eruption.

SECT. III.

Of the Aphthous Fever.

THE aphthous fever is defined by Dr. Cullen,

"Synochus. Lingua tumidiuscula, lin-
"guæ et faucium color purpurascens; as-
"charæ in faucibus, et ad linguæ margines,
"primum comparentes, os internum totum
"demum occupantes, albidæ, aliquando dis-
"cretæ, sæpe coalescentes, abrasæ cito re-
"nascentes, et incerto tempore manentes."

This definition, we shall find, does not include all the affections which have been known by the name of aphthæ; but it describes with sufficient accuracy that to which, by the general consent of physicians, the term is now confined.

It appears from what was said in the Introduction, that the aphthous fever is to be regarded in the same point of view as the miliary, being nothing more than the common synochus accompanied with an eruption of aphthæ, and the peculiar symptoms that

that attend it, whether accompanying fever or other diseases, or appearing as an idiopathic affection.

In detailing the symptoms of the synochus aphthosus, I shall pursue the same method followed in detailing those of the synochus miliaris; in the first place giving an account of the eruption, then enumerating the symptoms which precede or attend it, and lastly pointing out the febrile states in which it is most apt to shew itself.

1. Of the Symptoms of the Aphthous Fever.

Of the Aphthous Eruption.

The aphthæ infantum* is the same eruption which occasionally appears in synochus, and whether it attacks the infant or the adult, and whether it appears with or without fever, it is attended with the same train of symptoms. As a symptom of synochus it has not demanded so much attention as where it appears as an idiopathic affection, which it seldom does in adults. In the wri-

* The thrush.

tings

tings of those who treat of the aphthæ infantum therefore we find the best account of this eruption. I shall describe the idiopathic affection as it appears in children, and then shew that all the symptoms of aphthæ infantum occasionally attend this eruption when it shews itself in synochus.

The local affection of the fauces is often the first symptom of the aphthæ infantum; certain symptoms however now and then precede it even in the youngest children. From appearing in health they sometimes, very suddenly, shew signs of uneasiness; they either refuse the breast, or if they receive the nipple, do not suck; they appear restless and anxious, cry much, sleep less than usual, and what sleep they have, is disturbed. They become pale and emaciated, and are often troubled with hiccup, and diarrhœa in which the stools are acrid and fetid. Curdled milk is sometimes past by stool, and bile evacuated by vomiting.*

Such are the symptoms which Arnemann

* Arnemann's Commentatio de Aphthis.

says

says he frequently observed to precede the appearance of aphthæ.*

They are sometimes preceded by other symptoms. If the child is not very young, the pulse is often considerably affected, becoming more frequent than in health, the temperature is increased, and a sleepiness sometimes approaching to coma supervenes. Upon the whole however, in children, the affection of the mouth and fauces is generally the first symptom, the mouth becomes redder than natural, the tongue swelled and rough, and the nurse perceives an increase of temperature in the child's mouth. Sometimes the mouth becomes pale instead of red previous to the eruption of aphthæ, which generally presages a worse form of the complaint.

Soon after these appearances, the aphthæ begin to shew themselves in the internal fauces, and about the edges of the tongue.

* It will appear, as we proceed in considering the symptoms of this complaint, that those here enumerated by Arnemann as frequently preceding the affection of the fauces, arise from the aphthous eruption first seizing upon the œsophagus.

" Pustulæ

"Pustulæ sunt albicantes," says Ketelaer,* who saw as many cases of this disease as perhaps any other practitioner, "summis "ac internis oris, et interdum vicinis respi- "rationis partibus insidentes." The true aphthæ are described in nearly the same manner by most authors who practised in those countries where the disease is common. Armstrong compares their first appearance to that of broken curds.

Even on their first coming out, aphthæ sometimes so run together that they look like a white compact crust, covering a great part of the internal fauces, and often arising as it were from the œsophagus. At first, Boerhaave* observes, solitary pustules often appear here and there on the tongue, angles of the mouth, fauces, and neighbouring parts; these are generally of a favourable kind. Sometimes they appear first in the deepest part of the fauces, as if ascending from the œsophagus, in the form of a white dense shining crust‡ gradually spreading

* Ketelaer's Treatise de Aphthis Nostratibus.

† Aph. 984.

‡ It is in this case that the symptoms mentioned by Arnemann

ing over the fauces. These are of a bad kind and generally fatal. Boerhaave adds another appearance which they sometimes assume, "Aliquando duris crassis densis "tenacibus crustis, totum cavum oris ubi- "que, usque ad labia obsident, omnia te- "gentes simul: et ab his raro resurgunt "ægri."

In short, aphthæ are small whitish eschars, appearing in the fauces and about the tongue or lips, sometimes few and distinct, at other times numerous and confluent. Their number and degree of confluence are particularly to be attended to, as the prognosis rests much upon them.

In determining the number of aphthæ we may sometimes be deceived, since they are often numerous on the deeper seated parts, while they are but thinly scattered on the tongue and other parts of the mouth. It also happens, though rarely, Van Swieten observes, that although there be few aphthæ on every part which can be seen, yet on the more internal parts (for we shall find

Arnemann most frequently precede the appearance of aphthæ.

that

that the seat of aphthæ extends much farther than the fauces) they are very numerous, and may often therefore prove fatal when the physician least expects it, if he forms his judgment from the appearance of the fauces alone.

But even in this case, a person acquainted with the nature of the disease can hardly be mistaken, for wherever the aphthæ are numerous in internal parts, sickness, hiccup, oppression, and generally pain referred to the stomach, with much debility, point out the danger, which when these symptoms occur is always urgent, whatever be the state of the fauces. The presence of this variety of the disease, it is evident, is not so easily ascertained in children as in adults. Whatever be the attending symptoms, however, when the crust, mentioned by Boerhaave, appears to ascend from the œsophagus, it is probable that the more internal parts are considerably affected, and the prognosis therefore is bad. Nor is the case more favorable when the whole mouth appears covered with a crust and becomes dry, the process which ought to throw off this

this crust being absent or extremely languid. If this state of the fauces continues for a considerable length of time, the power of swallowing is lost, and the danger becomes very urgent. Van Swieten met with cases of this kind in which the tongue, lips, and cheeks were rendered almost rigid by the crust; so that a liquid could not even be retained in the mouth; at length, he observes, the same complaint spreading to the fauces, the patients were suffocated.

The colour of the aphthæ has occasioned some dispute, which seems to have arisen from the same aphthæ changing their colour and becoming darker the longer they adhere; for there seem to be no well authenticated cases in which the aphthæ on their first appearance were of a dark brown or black colour, as some writers have alledged. Boerhaave indeed observes, that the colour of aphthæ is various, being either of a pellucid or shining white, like pearls, or of an opaque white or yellow colour, livid, or even black.* But Boerhaave speaks here

* Aph. 985.

not of the difference of aphthæ on their coming out, but of the appearance of the same aphthæ at different periods; for his commentator Van Swieten, Arnemann, Ketelaer, Armstrong, and others, who had extensive opportunities of seeing this disease, declare that they never saw aphthæ dark red, brown, or black on their first appearance. "Non enim verisimile est," Ketelaer observes, "ut in rebus sibi adeo "vicinis, et cognatis, fors tantum polleat, "cum albæ plus millies nobis oblatæ sint, "ut rubrarum, nigrarumve, ne umbræ qui-"dem unquam apparuerint." We therefore see the propriety of Dr. Cullen's making whiteness one of the distinguishing marks of this eruption; and giving it a place in the nosological character.

But although aphthæ on their first appearance are never of a dark brown or black, they sometimes, though not very frequently, appear of a light brown or ash colour. Arnemann terms the colour of these "flavæ vel fuscæ cineritiæ."

The white pellucid aphthæ, like pearls, are

are always the safest,* and when they are few in number the disease is scarcely attended with any danger; but when aphthæ appear from the first of a brownish colour, the prognosis is very bad. Van Swieten says, that he has uniformly found such cases fatal. The prognosis is between these extremes; when the aphthæ appear at first of a pearl colour but in considerable number, and soon begin to assume a brownish hue; when they become black the danger is very urgent; they are then to be considered as nothing less than small gangrenous sloughs, which often reduce the whole internal fauces to a state of mortification.

It has just been observed that it is only after the aphthæ have remained for a considerable time that they become brown or black; hence the time they adhere becomes a point of consequence in forming the prognosis; but when they begin to fall, we shall often be deceived if we look for the immediate termination of the disease, since it frequently happens, that a fresh crop suc-

* When they appear of an opaque white, like lard, they are less favourable.

ceeds that which has fallen or been rubbed off.

If this crop appears more numerous and crowded together than the first crop, the prognosis is worse than when the aphthæ appear fewer and more distinct. But upon the whole one crop falling off and another appearing affords a more favorable prognosis, than one crop continuing for the same space of time, and becoming brown or black, which is always indeed the effect of its continuance.

Aphthæ sometimes fall off in the space of ten or twelve hours, at other times they remain attached for many days; nor do they fall from the whole fauces at the same time, nor always first from any one part, but in this respect they are as variable as in their duration.

Although when the disease continues for a considerable time, repeated crops of aphthæ afford a more favorable prognosis than the same crop remaining throughout the whole course of the disease; yet the prognosis is still better, when the aphthæ fall early, as in the former case, and are not succeeded

succeeded by a fresh crop or only by a very scanty one; it is therefore a matter of much consequence in forming the prognosis to be able to foresee whether or not a fresh crop of aphthæ is about to come out, and this in some measure may be learnt from the appearance of the places which the former occupied.

If they be clean, red, and moist, the aphthæ either do not re-appear, or only re-appear in a small number; but if the parts the first crop occupied appear foul and parched, then we may very certainly expect a renewal of the eruption, and in such cases the separation and reproduction of the aphthæ often take place a great number of times before the final solution of the disease. Both Ketelaer and Van Swieten observed this process repeated to the sixth, seventh, or eighth time; and the latter remarks that he has sometimes known an interval of several days between the separation and reproduction of the aphthæ; but upon the whole, however frequently they return, those aphthæ which fall off the soonest are the safest.

There are two seemingly opposite extremes, which are now and then equally dangerous. The one when the new crop supervenes before the old crop is thrown off; this not only gives rise to a great number of aphthæ adhering at the same time, but also shews that they have little tendency to separate, which is always an unfavorable sign. The other, and no less dangerous, case is when the first crop falls off, and from the appearance of the fauces we are led to expect another, which however does not come out, or, at least, is delayed for some days. If, along with this symptom, much anxiety, oppression, and other marks of debility, or a degree of coma, supervene, the danger is very considerable, this case generally proving fatal if a fresh crop of aphthæ do not make their appearance, which in most instances is attended with relief.

In the most favorable cases then, the aphthæ appear of a white pearly colour, fall off early, leaving the places they occupied clean, red, and moist; and upon the separation taking place, all the symptoms begin

begin to abate, and in a short time wholly disappear. On the other hand, the more the aphthæ assume a brownish tint, the longer they continue to adhere, the more foul and parched the places which they occupied appear, the sooner the first crop are succeeded by another, or the more alarming the symptoms of debility or the coma when a second crop does not make its appearance, the greater is the danger.

We have hitherto considered the course of aphthæ in the fauces, where it may be seen, but this disease sometimes extends to the more internal parts, and seems to run the same course in them as in the fauces. "Latius quandoque propagantur aphthæ," Lieutaud* observes, "quæ œsophagum, ventriculum et intestina haud sine presenti "vitæ discrimine nonnunquam invadunt." The same observations have been made by all who have been conversant in this disease.

The symptoms which indicate that the disease has extended to the stomach and

* Synopsis Med. Pract.

alimentary canal, are various. Many of these however cannot be detected in the aphthæ infantum, since infants cannot describe what they feel. In treating their complaints we must trust to our own observation and that of the attendants.

The symptoms to be discovered in this way, and which teach us that the complaint is extending along the alimentary canal, are, an appearance of much anxiety, oppression, and debility, vomiting, hiccup,* what Armstrong calls watery gripes, † and convulsions. What places the matter beyond a doubt is finding aphthæ about the time they are observed to separate in the fauces, thrown up from the stomach, or passed by stool.

Ketelaer saw them thrown out in both ways in astonishing quantity. "Aphthas

* Hiccup attends aphthæ in the œsophagus or stomach. See Van Swieten's Commentary on the 659 Aph. of Boerhaave.

† This is one of the most fatal symptoms, as we shall see more particularly in considering the treatment in this complaint, which must be so regulated as carefully to prevent the appearance of this symptom.

"quando

"quando jam maturuerunt et excernuntur, "tanta copia aliquos dies per os et per al- "vum nonumquam rejici, ut aliquot pelves "vel matulæ congestas eas vix capiant." Vogel makes a similar observation. This is almost incredible, and denotes the very worst form of the disease. Were there nothing to destroy the patient but the debility which so profuse an evacuation must occasion, he could not long support it.

Aphthæ have also been found in the trachea extending, as Lieutaud* observes, even to the bronchiæ. They are known to have extended to the trachea, and bronchiæ by the presence of dyspnœa, and by their being thrown up by coughing. This is perhaps the most dangerous form of the disease, the aphthæ often accumulating in the wind-pipe or its branches so as to occasion suffocation.

Besides the symptoms which have been enumerated, there are others, which, though less essential, often accompany this disease. When the aphthæ of the mouth fall off, a

* Synopsis Med. Pract.

salivation

salivation often ensues, in part at least caused by the high degree of sensibility which remains, the whole internal fauces sometimes appearing as if the cuticle had been abraded.

About the same time also, a diarrhœa frequently supervenes, which may either be produced by the affection of the stomach and the intestines themselves, if the disease has extended to them, or by the acrid matter secreted in the mouth being swallowed. As these symptoms supervene towards the termination of the disease, when the patient is much debilitated, they often prove alarming, sometimes carrying him off when the attendants, and even the physician, judge the danger nearly passed.

When these discharges are moderate, they have been looked upon as salutary. This opinion, however, is as much perhaps an inference from hypothesis as from facts; it being a favourite maxim with the older physicians, that the dregs of the fever, as they were termed, should be carried off by catharsis or venesection. The patient indeed often recovers about the time the salivation

and

and diarrhœa appear. But at this period the aphthæ fall, and the complaint generally remits, whether such symptoms supervene or not.

It will appear however in considering the treatment, that a moderate diarrhœa at the time the aphthæ fall is often useful, especially when the disease has spread to the stomach and bowels, by preventing a relapse, which the irritation of the fallen aphthæ in the bowels frequently occasions.

The taste in general is nearly lost, and deglutition is often prevented while the aphthous incrustation remains. After it is separated, on the contrary, the taste is so acute, and the whole internal fauces so sensible, that the mildest food gives pain, and the patient is now, although from a different cause, often as incapable of swallowing as before.

The aphthæ indeed frequently leave the parts so sensible, that they bleed on the slightest occasion; hence it is that bloody saliva and bloody stools frequently attend this disease. Boerhaave justly observes, that if we reflect that the seat of aphthæ is in the stomach and

and intestines, as well as in the fauces, we shall not be suprised at the variety of symptoms which attend, or follow them. This indeed readily explains the greater part of these symptoms, bloody or dysenteric purging, symptoms denoting inflammation, excoriation, or mortification, in the alimentary canal. "Aphthæ igitur vulgatiores et ori "coercitæ," says Lieutaud,* "minime sunt "pertimescendæ, et facile evincuntur, sed "ubi œsophago infiguntur, ad ventriculum et "intestina se spargere solent, hinc suborí- "untur febris, tormina, diarrhœa, dysenteria, "aliique graviores morbi: si vero laryngem "subeant, et ad tracheam bronchia et pul- "mones diffundantur; tussem ferocem, spi- "randi difficultatem, aliaque truculentiora "symptomata concitant."

Notwithstanding what Lieutaud says in the first part of this quotation, aphthæ, even when they extend no further than the fauces, are often a very alarming disease. For besides proving dangerous in the ways already mentioned by impeding deglutition and tending to interrupt respiration even

* Synopsis Med. Pract.

where

where the disease has not spread to the tracheæ,* aphthæ often induce mortification on the palate and neighbouring parts; for it frequently happens that when the aphthæ adhere longer than usual, the parts beneath become gangrenous, and the mortification sometimes extends to the palate bones.†

The aphthæ infantum are sometimes complicated with other diseases, most frequently with worms.

Such are the symptoms of idiopathic aphthæ, the aphthæ infantum. Idiopathic cases of aphthæ rarely occur in adults. Ketelaer indeed declares that such cases are very common; but it was observed in the Introduction that Boerhaave had seen but two cases of this kind, that neither Van Swieten nor Cullen had seen one, and Arnemann very few. When aphthæ appear as an idiopathic affection in adults, the symptoms do not differ from those of the

* Aphthæ, Vogel observes, often occasion suffocation merely by the swelling of the fauces which attends them.

† Aph. Boerhaavii, Aph. 989.

aphthæ

aphthæ infantum, and the treatment in both cases is the same.

Of the Symptoms preceding and accompanying Aphthæ.

Although the complaints in which the miliary eruption occurs, are no less various than those occasionally attended by aphthæ, yet it appears from what was said of the former eruption, that in whatever complaint it appears, a certain train of symptoms generally attends it. The same is true of aphthæ, although the accompanying symptoms in this instance are less uniformly present.

When aphthæ begin in internal parts (which is sometimes the case in the symptomatic as well as idiopathic aphthæ) their appearance in the fauces is consequently preceded by the various symptoms denoting their presence in other parts of the alimentary canal. In this case the aphthæ appear to ascend from the œsophagus in the same manner as in the worst cases of aphthæ infantum.

Anxiety, oppression, and debility however

ever often precede the appearance of aphthæ, when they are about to make their first attack on the fauces, and like most other eruptions, they are now and then preceded by a degree of coma, less frequently by delirium.

But such symptoms frequently occur in fevers where no aphthæ are about to appear, and aphthæ sometimes appear without being preceded by these, or indeed any other symptoms, which can be supposed particularly connected with their appearance; so that although there are certain symptoms which frequently precede this eruption, especially when it begins in internal parts, yet there are none from which we can with much certainty predict its appearance.

If however the foregoing symptoms occur in fever, while at the same time the fauces appear unusually red or pale, there is reason to expect an eruption of aphthæ.

It is almost unnecessary to observe, that when aphthæ spread from the fauces along the alimentary canal, they are followed by the same symptoms which precede their appearance,

appearance, when they make their first attack on internal parts. "But of much "more uncertain and dangerous event," Huxham observes, speaking of malignant fevers, "are the brown dark coloured aph- "thæ, Nor are those which are exceedingly "white and thick, like lard, of a very pro- "mising aspect; they are soon succeeded "by great difficulty of swallowing, pain "and ulceration of the fauces, œsophagus, "&c. and with an incessant singultus; the "whole primæ viæ become at last af- "fected; and a bloody dysentery comes on "followed by a sphacelation of the intes- "tines, as is evident from the black sanious "bloody stools, horribly fetid and ex- "tremely infectious."

Upon the whole, the symptoms of the symptomatic aphthæ are not different from those of the aphthæ infantum, except that the former generally occurring in adults, we have a more distinct account of many of the attending symptoms, and that these symptoms are occasionally modified by the idiopathic disease in which the aphthæ appear.

Of

Of the Febrile States in which Aphthæ most frequently appear.

In some fevers there is a remarkable tendency to dysenteric affections. The symptoms of dysentery are afterwards to be considered; it is sufficient at present to observe, that in fevers attended by much griping and mucous and bloody stools, the appearance of aphthæ is more frequent than in most others.

The first mention of aphthæ which occurs in the works of Sydenham, is in his account of the dysenteric fever of the years 1669, 1670, 1671, and 1672. The aphthæ generally supervened in those cases in which the fever proved obstinate, and chiefly, he observes, where the hot regimen had been pursued, and diarrhœas checked by the unseasonable use of astringents. "Præsertim si, præter regimen calidius, "evacuationes etiam per alvum medica-"mentis astringentibus prius fuerint coer-"citæ." Arnemann makes the same observations.

Sydenham further observes of this fever,

in which aphthæ were more frequent than he had found them in any other, that it was seldom or never attended with sweats, while in fevers, unaccompanied by aphthæ, the sweating was often profuse. The latter remark has been confirmed by many succeeding observations. Ketelaer even goes so far as to maintain, that it is the deficiency of perspiration that renders aphthæ more frequent in cold than in warm climates; and in support of this opinion he asserts, that he has found aphthæ rendered milder by a copious flow of sweat or urine, and that every thing tending to check these discharges, increases the virulence of the aphthæ.

Notwithstanding the truth of these observations, aphthæ are apt to appear in the miliary fever, where there is generally much sweating. There is such similarity between some of the symptoms attending aphthæ, and those attending the miliary eruption, that some have believed these eruptions to arise from the same cause, *

* "Materiem aphthosam et miliarem eamdem esse "judicabam." Stoll's Ratio Medendi.

and

and that when the appearance of the one is prevented, that of the other, the general state of the symptoms remaining the same, is a necessary consequence; and to this circumstance Van Swieten thinks we may ascribe the frequent appearance of aphthæ in cold countries, where the flow of sweat, and consequently the appearance of the miliary eruption, is checked; and on the other hand, the frequency of the latter eruption, with the rarity of the other, in warmer climates.

The frequent concurrence of the miliary eruption and aphthæ, certainly points out some connection between the two affections. Sydenham seldom met with aphthæ in fevers, except in the one just mentioned, remarkable for its dysenteric tendency; and in that which was mentioned when speaking of the synochus miliaris, in which he frequently observed both eruptions. "In the course of many miliary fevers," says M'Bride,* "it is frequent to see aphthæ

* Introduction to the Theory and Practice of Medicine.

" in the mouth and ulcerations in the fau-
" ces preying upon the tonsils and uvula."

This fact however does not certainly warrant the opinion, that both affections arise from a cause lurking in the body, that must produce the one eruption or the other. We are well assured that the miliary eruption may be prevented without inducing aphthæ. It will appear more clearly from what will be said of the causes of aphthæ, that irritation of the primæ viæ and skin, seems, from a well-known sympathy which subsists between the different parts of the alimentary canal, and between every part of it and the skin, often to give rise to this affection of the fauces, and it is in this way that we may account for aphthæ being so common in dysenteric fevers, and in those where the skin is unusually parched, or covered with so irritating an eruption as the miliary.

Aphthæ are also most apt to shew themselves where the debility is considerable; and particularly when those symptoms, which have been termed putrescent, make their appearance. In adults, says Arnemann,

mann, aphthæ very frequently follow putrid, continued, and intermitting fevers; "præcipue febres autumnales, quæ cum "diarrhœa et dysenteria incipiunt, imprimis "si ægroti, calido regimine fuissent usi, vel "materiæ peccantis evacuatio adstringen-"tium usu intempestivo foret impedita." Francis, he adds, met with aphthæ in putrid continued fevers; Bosch in putrid intermitting fevers; Grant in the irregular quartan and tertian; Hillary in the malignant dysentery; Huxham in the low nervous fever; Sims in a similar fever; Kloeckhoff in an epidemic continued fever; Untzer in putrid and hectic fevers.

Such are the fevers in which aphthæ frequently appear. The characteristic marks of these fevers are morbid affections of the skin and bowels, and much debility.

There are many other complaints, occasionally attended with this eruption, and as in fevers, so in these, it is still most apt to appear where debility prevails. Among the principal of these are worms and dysentery, further denoting the tendency of aphthæ to accompany affections of the alimentary

canal; and scurvy, phthisis pulmonalis, and the last stage of all kinds of dropsy further denoting their tendency to appear in debilitated states of the system. *

Such are the aphthæ properly so called, the symptoms which attend them, and the fevers in which they are most apt to appear. The term aphthæ however has been used to express complaints very different from the true aphthæ. Most of these are local affections of little consequence; it will be sufficient to mention a few of the most remarkable.

The indefinite use of the term aphthæ is chiefly met with in the works of the ancients, "Nam quæ a priscis medicinæ "conditoribus aphthæ describuntur, adeo a "nostris diversæ sunt, ut toto cœlo dis-"tent."† It has already been observed that aphthæ are less a disease of warm, than of cold climates; so that many doubt whether the true aphthæ were at all known

* Boerhaave remarks, that aphthæ are apt to accompany all visceral inflammations.

† Ketelaer de Aphthis Nostratibus.

to

to the ancients, and think that we have borrowed a term from them for the name of a disease, which was unknown in the times and countries in which they practised.* In the works of Hippocrates, Aretæus, and Galen, we not only find, mentioned under this term, affections of the mouth different from aphthæ, (small sores for instance on the inside of the cheeks and about the lips)† but also similar eruptions in other parts of the body, particularly in the genitals. A pustulary eruption of these parts, independent of any venereal affection, is not uncommon, and seems frequently the consequence of

* Sennertus asserts, on the authority of Aretæus, that aphthæ were common in Syria and Egypt; but the complaint mentioned by Aretæus is not the same with that now termed aphthæ.

† Van Swieten describes a thrush of a peculiar kind, which he thinks the same with one of the species of aphthæ mentioned by Aretæus. It was epidemic in Holland in the 18th year of the present century, appearing in small ulcers about the lips, cheeks, and gums, and when neglected on account of the little uneasiness it gave at first, quickly eroding the parts it occupied, and forming putrid sores. This complaint, like the true thrush, was most apt to attack children, and when it appeared in adults was generally milder.

cold, of which I have known several instances.

Besides these, there are other eruptions termed aphthæ by the ancients. The reader will find an account of many of them in the works of Fernelius,* and in those of Sennertus in his chapter entitled, De Oris Inflammationibus et Ulceribus.

2. Of the Causes of the Aphthous Fever.

It has just been observed, that this disease is more frequent in cold, than in warm and temperate climates. In the southern parts of Europe indeed it is hardly known; while in Holland and other northern countries there are few diseases more frequent. Van Swieten observes, that while he practised in his native country (Holland), there were few symptoms which more frequently occurred to him in acute diseases, whereas at Vienna he had not met with a single instance of aphthæ in the space of five years.

Aphthæ are most frequent in low marshy situations, and in spring and autumn, par-

* Fernelii Universa Medicina.

ticularly

ticularly in the latter when it is unusually moist, and follows a warm and moist summer. In short, cold and moisture are among the principal causes of this complaint. In Zealand, which lies lower than the surface of the sea, which is prevented from overflowing it by raised banks, aphthæ are so frequent, that Ketelaer calls them the endemic distemper of the island.

Although aphthæ appear in people of all ages, infants and old people, Boerhaave observes, are most subject to them. In many parts of Holland, it is unusual for a child to escape aphthæ during the first month; but they are generally of so favorable a kind, that in most cases medical assistance is not necessary. In old people, in whom they generally appear during fevers, they are for the most part of a bad kind, and often prove fatal.

Such are the circumstances which may be regarded as the predisposing causes of aphthæ, for although cold and moisture have a principal share in producing the disease, the application of some other cause in general seems necessary, since the majority

jority of children in most countries, however cold and damp, escape it.

One of the principal exciting causes appears to be derangement of the primæ viæ. It was observed that aphthæ are frequently preceded by symptoms indicating such derangement. It has been an observation, says Arnemann, from the days of Hippocrates even to our own times, that impurities of the primæ viæ are conjoined with exanthemata and other cutaneous diseases; and daily experience evinces, that derangement of these passages tends to vitiate the skin in various ways. "Signa præterea "aphtharum," he adds, "eruptioni præ-"cedentia et socia symptomata sat superque "declarant, mali nostri fomitem in primis "viis unice quærendum esse, communi om-"nium cutis exanthematum scaturigine. "Indicant aphtharum ex abdomine origi-"nem nausea, vomitus, diarrhœæ male "olentes, fecium color viridis, mucus et "colluvies ovorum albumini quandoque non "absimilis. Quin adeo prædixit cl. Ooster-"dyck futuram aphtharum eruptionem, ex "anxietate,

"anxietate, pondere stomachi, sensuum "confusione, somnolentia, singultu, tussi- "cula sicca, et frequenti screatu." But these things, he observes, are so well known, that I might appear tedious were I any longer to dwell on them.

We shall also find, that some arguments in support of the opinion, that aphthæ are occasioned by impurities of the alimentary canal, may be drawn from the mode of treatment.

It does not appear, that such affections of the primæ viæ do always, by their local irritation, first produce the aphthæ in the stomach and bowels, which afterwards spread to the fauces; but from the sympathy of parts, they occasion their first eruption in the fauces.

From what has just been said it follows, that the various causes of derangement in the alimentary canal are to be regarded as occasional causes of aphthæ. One of the chief of these is worms, and it appears to be in this way that these two complaints are so frequently conjoined. Bad milk often has the same effect; Lieutaud observes, that

that a drunken nurse often occasions aphthæ in the infant, and the same may be said of whatever else disturbs the nurse's health, such as anxiety, violent passions, &c.

Some suppose that bad milk may operate in another way in producing aphthæ, by irritating the fauces, and it would be difficult to ascertain that aphthæ proceed from the action of the milk on the stomach and intestines alone, although there are many reasons to believe that this is the case.

There can be little doubt however, that more powerful irritations of the fauces are sometimes the exciting cause of aphthæ. Sennertus indeed esteems local irritation in the mouth a frequent cause of the complaint. "Gignuntur aphthæ interdum primario in ore, dum ibi pravi humores collecti sunt, quos natura foras expellat." And Dr. Home in his Principia Medicinæ enumerates among the causes of aphthæ "Frictio oris ab externis causis," and violent exertions in sucking. Nay the former author even thinks that where they arise from the morbid contents of the stomach, they

they are occasioned by these, or an acrid vapor arising from them, being thrown upwards and immediately applied to the fauces. When we reflect however, that derangement of the alimentary canal frequently occasions eruptions on the skin, as well as in the fauces, this opinion appears very improbable.

In the same way, we may account for an increased secretion of bile proving the cause of this complaint. Fernelius considers this one of its most frequent causes. It has not however been generally so regarded; an immoderate secretion of bile being rare in those countries where aphthæ prevail.

Such are the chief circumstances which have been determined respecting the causes of the aphthæ infantum; yet in many cases they do not seem to proceed from any of those which have been mentioned; and in a still greater number of instances, these causes are present, without producing the disease.

Still less is known respecting the causes which give rise to aphthæ in adults. The presence

presence of the different diseases in which they occur may doubtless be looked upon as the predisposing causes, and in considering in what kinds of fevers they most frequently make their appearance, we found certain circumstances, besides affections of the primæ viæ, namely, unusual deficiency of perspiration, and the presence of the miliary eruption, favorable to their appearance.

How these circumstances tend to produce them, or whether or not they and the aphthæ arise from the same unknown cause, it is impossible for us positively to determine. It has already been hinted, that the sympathy which subsists between the different parts of the alimentary canal and the skin, may explain why affections of the latter are frequently accompanied by aphthæ. We know that derangement of the stomach and bowels produces aphthæ, and nothing injures the functions of these organs more than causes affecting the perspiration.

3. Of the Treatment of the Aphthous Fever.

The treatment of aphthæ may be divided into

into two parts. In the first, we shall consider the cure of idiopathic aphthæ, the aphthæ infantum; and in the second, the mode of treatment when aphthæ appear in fever. As for those cases in which aphthæ supervene in dropsy and other complaints, unaccompanied by fever, their treatment is in no respect different from that of idiopathic aphthæ, except as far as the treatment of the primary disease renders it so.

We are in the first place then, to consider the treatment of idiopathic aphthæ.

The first thing to be done is to remove the remote causes, if they still continue to be applied. It appears from the foregoing observations, that we have often reason to suspect the disease to arise from bad milk. The state of this should therefore be examined, and if it be found that no attention to diet renders it mild and sweet, it is necessary to change the nurse.

Wherever we suspect the disease to have arisen from the ingesta, we must begin the treatment by clearing the primæ viæ. Both emetics and cathartics are recommended by those

those who have been most conversant with the disease.

The exhibition of the latter requires much caution, very gentle cathartics in this complaint having sometimes induced a fatal hypercatharsis. Children who die of aphthæ indeed, even where no cathartic has been exhibited, are very frequently carried off by a profuse diarrhœa.

This ought not however to deter us from employing gentle laxatives at the commencement of the complaint, especially when it seems to arise from the cause just mentioned. It is in fact one of the best means of preventing profuse purging, since the irritating matter, when permitted to accumulate in the alimentary canal, increases the morbid affection of the intestines. Sydenham, it was observed, remarks, that he has often seen aphthæ induced by stopping a diarrhœa, and thus confining irritating matter, which, together with that produced by the disease itself, often gives rise to the fatal purging just alluded to. But whether it has this effect or not, the retention of irritating matter in the

the primæ viæ must increase a complaint, which it is capable of causing. Those were the worst and most dangerous cases, Ketelaer from very extensive experience observes, in which evacuations were not employed in the beginning.

Thus far then the practice seems well ascertained: a gentle cathartic is proper in all cases when we see the patient at the commencement of the disease, particularly where there is reason to suspect irritating matter in the alimentary canal. Nor should the disease appearing in the mildest form, induce us to neglect this precaution, which can never do harm.* If there is much acid

* The syrup of rhubarb has been recommended as one of the best cathartics in this case. The preparations of rhubarb, while they evacuate the intestines, tend at the same time to strengthen the digesting organs. They are all apt however, especially when given alone, to occasion much griping. Rhubarb and magnesia are much recommended as a cathartic for children by Dr. Underwood, in his Treatise on their Complaints. Manna and the cassia fistularis, recommended by Dr. Cadogan in his work on the Management of Children, as less irritating than rhubarb, in the present case are perhaps preferable to it. Myroba-

acid in the primæ viæ, absorbents are proper, and magnesia is preferable to chalk, as it forms with the acid generated in the bowels a cathartic salt. Dr. Aery, in the second volume of the Medical Museum, says, that he has almost entirely laid aside other remedies in the thrush, confining himself to magnesia in small doses; and with this practice for many years he had lost only one in thirty. Dr. Underwood also trusts chiefly to absorbents in mild cases.*

lans are possessed of virtues in some degree similar to those of rhubarb, and are recommended by Van Swieten in this disease. Myrobalans are the dried fruit of a tree growing in the East Indies, with which botanists are not well acquainted. Their taste is astringent; they strike a black colour with chalybeate solutions, and are even employed by the Indians for tanning leather. Their purgative virtue is trifling. To the case before us, where much purging is dreaded and the patient very young, they seem well adapted, and the authority of Van Swieten, who was well acquainted with the aphthæ infantum, in their favor is not to be overlooked. They have been rejected however from the catalogue of simples by the colleges of London and Edinburgh.

* See Underwood on the Diseases of Children.

Should

Should the purging, however induced, shew a tendency to become excessive, which is always attended with danger in this complaint, we need not hesitate to exhibit a gentle anodyne, after the matter we wish to expel is evacuated. Lieutaud remarks, that anodynes are not only innocent but useful in this complaint, when cautiously administered, even where they are not used with a view to check immoderate catharsis.

It sometimes though rarely happens, that symptoms denoting a tendency to visceral inflammations shew themselves. In such cases it is better to permit the purging to continue till the symptoms are relieved, and at all events not to check it by opiates. But children are much less subject than adults to such inflammations, and the chief danger in the aphthæ infantum arises from debility.

When there is no tendency to excessive purging, opiates perhaps may be omitted, unless they be necessary to procure sleep, when they are always to be employed, except in the inflammatory cases

just mentioned, proper means being used to prevent costiveness.

But the practice which is proper at the commencement of the complaint, is by no means suited to the advanced stage of it. If the disease has been properly treated from the beginning, there cannot at this period be any occasion for cathartics. But even in those instances, in which proper evacuations have been omitted till the disease is far advanced and the stomach and bowels are loaded with irritating matter, even in such cases, which seem more than any other to demand the employment of cathartics, we are not warranted to recommend them. They have often at this period induced a fatal hypercatharsis. The fæces may be evacuated by clysters, but it is dangerous to go further.

Arnemann proposes to give cathartics in small doses till the desired effect is produced, in order to guard against hypercatharsis; but we have reason to believe that neither this nor any other precaution can render their exhibition safe at the height of the disease. Ketelaer, whose opinion must have

have great weight, makes some excellent observations on the use of cathartics. "Eædem rationes etiam contra purgatio-"nem eam militant, quæ cacochymiæ pro-"pria et accommodata, ab universo corpore "et ulterioribus viis, noxios quosque hu-"mores trahit. Ea hic funestissima est, "et intra paucas horas hypercatharsi finem "vitæ plerumque facit." But there is another kind of purging, he adds, if so it can be called, which may be employed with propriety, as it only evacuates the fæces, namely, that induced by clysters. These medicines, he continues, are excellently suited to this disease in which costiveness is frequent; they not only empty the intestines, thus removing a noxious irritation; but they often relieve oppression, and what is of equal consequence frequently restore the other excretions, particularly those of the skin and kidneys, and tend to loosen the aphthæ.

Notwithstanding these observations of Ketelaer however, the indiscriminate use of clysters in this complaint is often dangerous; they have the same tendency with

cathartics, though in a less degree, and should never perhaps be employed at this period, where the body is moderately open, unless the complaint be mild and the inflammatory tendency evident; and Ketelaer in other places makes nearly the same remark. In short, we recommend clysters at this period of the aphthæ infantum, to obviate restlessness, oppression, &c. occasioned by costiveness; and we ought not perhaps to recommend them till these symptoms begin to shew themselves.

It is to be recollected, that we do not at this period attempt to evacuate the stomach and small intestines, since the risk of inducing hypercatharsis more than counterbalances the chance of advantage from it. If the intestines have not been cleared at the beginning of the complaint, this must be looked upon as an irremediable error, and we must patiently wait its consequences. Hypercatharsis is chiefly to be dreaded when the disease has spread to the stomach and bowels.

Reflecting on what has been said, we readily perceive the effects to be wished for,

for, and those to be dreaded, from clysters. By an attention to these, we determine what the composition of the clyster ought to be.

The first thing we have in view is to evacuate the fæces, with as little irritation as possible, the clyster must therefore be mild, it should consist chiefly of water gruel or some other mucilaginous decoction. Some have recommended the addition of a cathartic, but this should only be had recourse to when a milder clyster is found insufficient. We have also in view to relax the excretories. Few things tend more to promote diaphoresis than a quantity of diluting fluid received into the stomach or intestines, and we have seen that according as the perspiration is free, the disease is often mild or otherwise. On this account the quantity injected should be considerable. When the aphthæ spread to the great intestines, which it was observed they often do, and even appear externally about the anus, clysters serve a further use, in lubricating and softening the parts to which they are immediately applied, and thus dis-

posing the aphthæ to fall. In short they produce effects similar to those of gargles in the fauces, and should therefore in these cases be gently detergent as well as mucilaginous.

When such clysters are found to produce but little evacuation of the fæces, which is often the case, they may be repeated frequently.

That I may give at one view what is to be said of the employment of cathartics in the aphthæ infantum, which forms a very principal part of the treatment, it is to be observed, that there is a period of the disease, which succeeds that I am speaking of, in which their exhibition again becomes proper.

We must, says Arnemann, be careful not to exhibit purgatives while the aphthous crust still adheres to the intestines and their surface is raw and excoriated; but they are necessary in the beginning of the complaint, and in its decline, when the aphthæ begin to fall, and are passed by stool. They are then serviceable by expelling the fallen aphthæ which, when allowed to remain

main, soon begin to corrupt and produce a new train of morbid symptoms.

But even after the aphthæ begin to fall, the danger of hypercatharsis, as might be supposed from the observations of Arnemann, is by no means passed, and sometimes scarcely at all lessened. There are several circumstances to be attended to in recommending cathartics at this period. We must not, as soon as a few aphthæ are thrown out by stool or vomiting, order a cathartic; we must wait at least twenty-four hours after this appearance, in order to learn whether the separation of the aphthæ be really the solution of the disease, or merely partial and succeeded by a fresh crop, which is known by the symptoms suffering no abatement. In this case nothing more than an emollient clyster is to be recommended.

When on the other hand the symptoms abate, and particularly if the aphthæ of the fauces fall, leaving the parts they occupied clean and moist, which is a sign, it was observed, of their not being about to return, a cathartic is not only safe but necessary.

necessary. If irritating matter in the primæ viæ is capable of producing the disease, where it had not previously existed, it may certainly be the means of renewing it.

In short, cathartics are to be employed in the decline of the disease as early as can be done with safety.

However flattering the state of the patient may be, hypercatharsis may be induced by a rough cathartic. The intestines are often left by this disease in a very irritable state, and the proper choice of a cathartic is therefore a point of much consequence. On this subject there is little to be added to what has already been said. Rhubarb we still find particularly recommended by those who have practised extensively in this disease. Calomel has been much recommended, but this, and still more scammony, which is also employed, are certainly exceptionable.*

Such are the circumstances to be attended

* Has calomel any specific power in this disease as we shall find it has in many other inflammatory affections? If not, less irritating cathartics are certainly preferable.

to

to in the employment of cathartics in aphthæ, without an attention to which, the practitioner must often be guilty of fatal errors.

Emetics may also be beneficial or otherwise.

At the commencement of the complaint they serve the same purpose as cathartics, by evacuating the morbid contents of the alimentary canal. At this period however they are on many accounts preferable to cathartics; their operation tends to weaken less, and is particularly easy in young children, who seem often to vomit with scarcely any uneasiness. Besides, the cause of the disease seems often lodged in the stomach rather than in the intestines. It is an organ of greater sensibility. Its affections produce greater and more sudden effects on distant parts. If aphthæ be ever produced by acrid matter applied to the fauces, it is chiefly from the stomach that such matter comes. A pain in the stomach and vomiting more frequently precede the appearance of aphthæ, than a griping or diarrhœa; in short the stomach is that part of the primæ viæ

viæ which seems most connected with the state of the disease. It is not surprising therefore, that at its commencement emetics are often attended with the best effects.

Arnemann extolls them above every other remedy. "Emetica infantibus præscripta, "omnibus medicamentis reliquis palmam "præripere videntur, quando morbi fomes "in ventriculo adhuc latet, et anxietas, sin-"gultus, ructus male olentes vel vomituri-"tiones ipsæ adsunt." Nor are they, he adds, to be preferred to cathartics, only because they seem better calculated for removing the cause of the disease, but also because they are found to weaken much less. They seem also serviceable, he might have added, by promoting perspiration, and it is probably in this way that they often relieve the disease, where the stomach is not loaded.

If however the first emetic does not bring relief, it is not probable that its repetition will be attended with much benefit.

Emetics in the more advanced stages are either unnecessary as in mild cases, or they may do much harm where the aphthous incrustations

crustations have spread to the œsophagus and stomach, by producing hemorrhagy, excoriation, or inflammation.

Dr. Armstrong and Ketelaer recommend antimonial preparations both as emetics and cathartics in this complaint. At an early period antimony is perhaps the best emetic we can employ, but in more advanced stages of the disease, should it be necessary to recommend an emetic, which is seldom the case, we must employ one which we can venture to prescribe at once in such a dose as secures its success. In this case therefore, ipecacuanha is preferable to antimony which must be given in small doses and may consequently pass the pylorus and excite purging.

Disputes have arisen respecting the propriety of blood-letting in the aphthæ infantum. Some asserting that all periods of the complaint are equally proper for the employment of this remedy, should inflammatory symptoms appear; others deeming it so dangerous to let blood after the appearance of aphthæ, that there is scarcely any

any symptom which will induce them to recommend it.

Reflecting on the nature of the complaint, the question seems a priori easily decided, and the judgment we are thus led to form is sanctioned by experience. Whatever other effect venesection produces it always diminishes the strength. The question then is, are there any of the symptoms of the aphthæ infantum which we would endeavour to remove at this risk? In perhaps ninety of a hundred cases there are not. In by far the majority, the causes of debility are more to be dreaded than any other. And in these circumstances who would think of adding one more to the number, and that the most powerful of all?

If the excitement is such as indeed threatens danger, or visceral inflammation has supervened, we must have recourse to bloodletting; but the latter seldom, and the former almost never, occurs in the aphthæ infantum.

When such symptoms do occur, bloodletting may be employed at any period of the disease, but with the more caution the more

more it is advanced. Such is the practice warranted by experience, and with respect to assertions which pre-conceived opinions have extorted, even from the best writers, they deserve little attention. "Omnem "igitur, præsentibus aphthis," says Ketelaer, "incisionem venæ huc usque damna- "mus, atque proscribimus." But in another place the same author admits, that plentiful blood-letting is necessary when an internal inflammation supervenes at any period of the disease, and gives a case in which it saved the patient's life.

The diet in this complaint requires some attention; on this however there is little to be added to what was said of diet in synochus. When fever is present, the diet must be regulated by an attention to the febrile symptoms. If the excitement be considerable, it must be light and diluent; if too low, as happens in the majority of cases, the diet must be more nourishing; but in all cases it should be mild and mucilaginous.

In most cases it is proper to give cordials

dials* composed of a little wine and aromatics, and sweetened with sugar. If the patient be at the breast and can suck, good milk of course must form the principal part of the diet. Where deglutition is wholly prevented, mild nourishing clysters have been recommended, and are often serviceable.

It only now remains to make some observations on the local remedies employed in the aphthæ infantum; and these, in the mildest cases where the aphthæ spread no farther than the fauces, and where there is no general affection of the system, are all that is necessary.

As it is impossible to make infants wash the mouth with any thing and then spit it out, the applications made to the internal fauces must either be such as may be swallowed, or they must be applied in very small quantity, by means of the finger or

* For the use of the bark in this complaint, see what is said of it when speaking of local remedies. It will then be necessary to mention it, and it will save repetition to throw together the few observations to be made on it.

a bit of rag. The former are not only useful by their effects in the fauces, but serve a similar purpose in the stomach and intestines when the aphthous eruption has spread to them. They are generally composed of mild mucilaginous and gently stimulating decoctions. The decoction of turnips or turnip-radishes, or their expressed juice mixed with water, and sweetened with sugar, or honey which is better, may be given in the quantity of a dram or two every half hour. The common people in Holland use small beer or ale sweetened with sugar. Van Swieten recommends veal broth, boiled with rice and bruised turnips, which has the advantage of being an excellent article of diet in this complaint.

It has already been hinted that when the rectum is affected, mild injections are proper, and produce effects similar to those of gargles in the fauces; they should consist of such decoctions as those just mentioned.

The ingredients left, after the preparation of some of these decoctions, are often applied to the external fauces by way of cata-

plasm, and sometimes relieve the internal parts.

More stimulating remedies than those just mentioned, seem in many cases to produce better effects. Dr. Armstrong found a solution of white vitriol, in the proportion of about half a scruple to eight ounces, very successful, occasionally adding a little more of the vitriol. And about a dram of this mixture, he observes, now and then swallowed is of service by cleansing the stomach and bowels. He generally applied it however by means of a piece of rag three or four times in the twenty-four hours.

We shall have occasion to consider more particularly the different applications to the internal fauces, indicated when a tendency to gangrene shews itself, in speaking of the cynanche maligna.

Much difference of opinion has arisen concerning the use of refrigerant and astringent gargles in aphthous affections. Practitioners having observed, that in certain cases an alarming train of symptoms sometimes attend the sudden retrocession of aphthæ,

thæ, have avoided such gargles. Ketelaer reprobates them in the strongest terms.

This is not only reasoning a priori, but reasoning also on very bad grounds. It is a mode of reasoning however that has been very generally adopted by Physicians, and it may not be improper to take this opportunity of making a few remarks upon it.

In almost all the exanthemata it now and then, though rarely, happens, (for such cases are much less frequent than the fears of some writers have inclined them to suppose) that the eruption suddenly disappears, a train of symptoms supervening, which, if effectual means for restoring the eruption are not speedily employed, often terminates in death. This accident I shall frequently have occasion to notice in considering the exanthemata, and shall point out its causes, and the means to be employed when it happens. It has been inferred, that the train of symptoms which attends the retrocession of eruptions, is its consequence; and that the same effect will follow if we repel, or even retard the eruption, whatever be the means employed for this purpose.

This mode of reasoning is similar to, and equally fallacious with, that employed respecting the solution of fevers by crises. From observing that a spontaneous flow of sweat, for instance, often attends the change from fever to health, it was inferred, that the same beneficial effects are to be expected from a sweat however excited. This inference, it was remarked, when speaking of the crisis of fevers, is invalidated by reflecting, that the sweating, instead of causing the solution of the disease, may only be a symptom of recovery; and that it is so seems probable since forced sweats rarely induce a crisis.

There is precisely the same fallacy in the reasoning employed in the case before us. Although dangerous symptoms are sometimes observed to supervene on the eruption spontaneously disappearing, it is by no means an inference from this, that the train of unfavourable symptoms is occasioned by the retrocession of the eruption; both may be the effects of a common cause, the disappearance of the eruption being only one of the unfavorable symptoms, and having

having no share in producing the others. And that this is generally the case appears highly probable, when we know, that the accompanying symptoms often appear a short time before the retrocession, and that it is in debilitated states of the system, and after debilitating causes have been applied, that the retrocession generally happens; circumstances sufficient to account for the symptoms that attend it, and which often produce the same train of symptoms in cases where there is no eruption.

And that such symptoms will not follow the retrocession or retardation of the eruption, except the body be somehow or other peculiarly predisposed to them, appears from numberless facts, which seem at first accidentally to have obtruded themselves on the attention of physicians. Thus we know that retrocession in the small-pox or miliary fever has been accompanied by the same symptoms which attend the retrocession of aphthæ. In a thousand cases however the most vigorous means for repelling the eruption in the small-pox and miliaria are every day employed, and they are actually im-

peded and kept back, and yet no bad consequences, but on the contrary, the best effects, ensue.

It is true indeed, that when the eruption is recalled, the unfavorable symptoms generally disappear; but what are the means of recalling the eruption? those which obviate the debility that occasioned its retrocession; and we have reason to believe, that the relief obtained is not the consequence, but the cause of the re-appearance of the eruption.

In considering the propriety then of astringent gargles in aphthæ, let us appeal from the doctrine of retrocession to simple fact.

Have astringent gargles been employed in this complaint, and what have been their effects? They were employed in cases of aphthæ as early as the days of Sydenham; for this author used the bark in fevers, while aphthæ were present, and found that the fever yielded and the separation of the aphthæ was promoted by it. Such was the dread of astringent applications while aphthæ were present, that, even in typhus,

long

long after the benefit derived from the bark in this fever was ascertained, the appearance of aphthæ was deemed a sufficient reason for avoiding it, till Sydenham and some other practitioners ventured to employ it. I was encouraged to give the bark in debilitated aphthous patients, says Van Swieten, in whom the incrustation often became very thick. It was given in decoction, because the powder is not easily swallowed when the fauces are covered with aphthæ. I did not give the bark in those cases without some fears that by its astringency it might do harm; of two evils however the best that could be done was to choose the least. I therefore continued to give the bark, interposing between the doses emollient decoctions, to correct any hurtful tendency it might have. I had not, he adds, continued this practice long, before I was astonished to find that the aphthæ terminated favorably in those patients who took the bark, sooner than in those who did not, although the latter were not only stronger but had also less fever.

So thoroughly now are practitioners con-

vinced of the safety of the bark in aphthous complaints, that they not only use it occasionally as a gargle, but give it internally in large doses, even where there is no fever, if the disease threatens to be alarming; and its decoction is very generally recommended in the mildest cases. *

The same objections have been urged against the use of acids, tending, it was supposed from their refrigerant power, to repel the eruption, and particularly against the sulphuric acid on account of its astringency. Some practitioners however have been bold enough to employ them, and have established the propriety of doing so.† The muriatic acid properly diluted, has been found particularly useful.

* See the observations of Boerhaave, Van Swieten, Ketelaer, and those of Vogel in his Prælectiones de Cog. et Curand. Morbis.

† For a variety of applications to the internal fauces, see Vogel and others on Aphthous Fever. For easing the pain of the excoriated fauces, Burserius recommends a mixture of the yolk of eggs, cream, and syrup of poppies; when the salivation is considerable, a decoction of agrimony with honey; when it is obstinate and profuse, gentle astringents.

Such

Such is the treatment of the aphthæ infantum, and from what has been said may be readily collected the treatment in every other form of the disease.

With regard to the treatment of symptomatic aphthæ, it seems to be much more simple than many have imagined. It is not difficult to perceive how hurtful many of the prejudices just mentioned must prove, if permitted to influence our practice in every complaint in which this eruption occurs. What would be the consequence, were we, for instance, in synocha to abstain from blood-letting, or in agues and typhus, from the bark, as soon as aphthæ make their appearance. If these prejudices demand no attention while the aphthæ are the only complaint, they certainly demand as little when they are merely a symptomatic affection, and when neither their appearance nor falling materially affects the primary disease.

When indeed aphthæ prove critical in fevers, which rarely happens, it would be improper to employ any means which might tend to impede the eruption. The use of astringent

astringent gargles even in this case has not, as far as I know, been found injurious. From analogy however we should be inclined to avoid them. It is improper, we know, to check other critical discharges, those for instance by sweat or stool.

It only remains to make a few observations on certain symptoms, the treatment of which does not fall under the general plan of cure.

Those which chiefly demand attention, are profuse diarrhœa or hypercatharsis, and the symptoms which attend retrocession. It often happens indeed that in neither of these we can be of any service. In the latter we must trust chiefly to tonic medicines. The eruption seems to recede in consequence of debility, and when this is obviated, it often reappears. Bark and astringent wines are the remedies chiefly to be depended on. Thus the remedies which have been supposed capable of occasioning retrocession, are not only the best means of preventing it, but also of obviating the danger which attends it. Gently stimulating applications

to

to the internal fauces are also sometimes of service in recalling the eruption.

With regard to hypercatharsis, we must endeavor to check it by opiates and astringents. Of the latter, gum kino and the extract of logwood seem the best for this purpose. Where there are symptoms of acidity, the mistura cretacea should be joined with these medicines; but caution is requisite in checking ~~even~~ purging, and the diarrhœa which occurs in the decline of the disease and throws out the fallen aphthæ, if not profuse, is salutary.

SECT. IV.

Of the Vesicular Fever.

CONCERNING the characteristic symptoms of this fever there has been some dispute. It is defined by Dr. Cullen,

"Typhus contagiosa, primo, secundo, aut
"tertio morbi die, in variis partibus vesi-
"culæ avellanæ magnitudine, per plures
"dies manentes, tandem ichorem tenuem
"effundentes."

Dr.

Dr. Cullen never saw the disease but once, and some of those who have had more frequent opportunities of observing it have proposed considerable alterations in his definition. Dr. Dickson* observes, that he doubts much whether this disease should be considered contagious. He saw six cases of the complaint, in none of which it was received by contagion, nor communicated to those who attended the sick.

He also objects to that part of the definition in which it is said that the eruption appears on the first, second, or third day, as he observed it appear on other days of the complaint. † Perplures dies manentes, he also thinks exceptionable, as he never found them remain for many days.

The fluid of the vesicles, instead of being a thin ichor, as mentioned by Dr. Cullen, was a bland, inodorous, and insipid fluid; and lastly he observes, instead of being

* See his paper on Pemphigus (the name by which this fever is generally known), in the Transactions of the Royal Irish Academy in 1787.

† Sauvages remarks, that the vesicular eruption sometimes appears on the fourth day.

poured

poured out, it was ~~greatly~~ generally absorbed. He therefore proposes the following instead of Dr. Cullen's definition.

"A fever accompanied with the succes-
"sive eruption from different parts of the
"body, internal * as well as external, of
"vesicles about the size of an almond,
"which become turgid with a faintly yel-
"lowish serum, and in three or four days
"subside."

This definition is certainly preferable to that given by Dr. Cullen, not because the disease never appears in the form described by the latter, but because it sometimes does not, and it is necessary to have a definition including every form of it.

Notwithstanding the observations of Dr. Dickson, Dr. Cullen's definition applies perhaps to the generality of cases. On the Continent, where the disease is more frequent than in these kingdoms, it seems generally to assume the appearance described by Dr. Cullen. The blisters in particular

* We shall find that this eruption is not confined to the skin.

are

are generally filled with an acrid serum, which is discharged not absorbed.*

Mr. Blagden, in a Letter to Dr. Simmons, relates two cases of pemphigus which fell under his care, and seemingly with a view to Dr. Dickson's observations makes the following: "And now I may be permitted to draw the following conclusions, "that the pemphigus is contagious, † that "new vesicles in every case do not arise "after the end of the fourth day, that the "fluid they contain does not in every case, "even of pemphigus simplex, appear to be "of a bland nature, and that in some instances no apparent absorption takes "place." In short, the cases which Mr. Blagden saw, very accurately correspond to Dr. Cullen's definition.

There is another letter indeed on the same subject also addressed to Dr. Simmons by Mr. Christie, whose observations agree better with those of Dr. Dickson. He

* See the observations of Burserius and other foreign writers on this disease.

† One of his patients seemed to take the disease from the other.

thinks

thinks the disease ought to be divided into two species, pemphigus simplex, and pemphigus complicatus. But our knowledge of this variety of fever is not sufficiently extensive for rendering such a division of much consequence. As we proceed in considering the symptoms of the complaint, its varieties will of course be mentioned.

1. Of the Symptoms of the Vesicular Fever.

Of the Vesicular Eruption.

This eruption appears in the form of small pellucid blisters, similar to those produced by burning. They are of different sizes, sometimes as large as walnuts, more frequently about the size of almonds, and often considerably less, surrounded by more or less inflammation. They appear on the face,* neck, trunk, arms, and sometimes over the whole body,† as in a case given by Dr. Stewart in the Medical Commentaries,

* Burserius observes, that they are particularly apt to appear on the face and neck.

† When they have appeared on the scalp, the hair generally falls from the places they occupied.

in

in which the vesicles were of the size of a walnut, and the distance of any two of them from half an inch to three or four inches. They sometimes run into each other.

It has just been hinted that external parts are not the only seat of this eruption. The mouth and fauces, where it now and then makes its first appearance, are particularly apt to be attacked with it. This happened in a case related by Dr. Dickson, in which on the third day of the fever, the patient complained of a smarting itching, and, as she termed it, tingling in her tongue and through the whole inside of her mouth. Her tongue was of a florid red colour, dry, and clean. On the day following there appeared upon it a large pellucid vesicle filled with a faintly yellowish serum, a smaller one of the same kind appearing on the inside of the cheek.

In some instances the complaint spreads along the whole alimentary canal. "No "person," Dr. Dickson remarks, "has no- "ticed an extraordinary peculiarity in this "disease, that the vesicles have taken pos-

"session

"session of the internal parts of the body, "and proceeded in succession from the "mouth downward through the whole tract "of the alimentary canal, some rising while "others decayed." *

The following are the symptoms which indicate that this eruption is spreading along the alimentary canal. Great difficulty of swallowing, the vesicles in the mouth, when there are any there, at the same time beginning to shrivel and crack, the eruption being apt, in spreading to neighbouring parts, to leave those it first attacked. From these symptoms, especially if accompanied with hiccup, we infer that vesicles are coming out in the œsophagus.

When they have spread to the stomach,

* He first observed this in the case of a woman treated by Dr. Gregory in the Edinburgh Infirmary. In this instance, the menses had been interrupted for a year and a half, during which period the patient had been twice before subjected to the same complaint, and each time it followed a vomiting of blood. The other case in which Dr. Dickson met with this eruption spreading along the alimentary canal, he relates very minutely. In this case the first appearance of the eruption was in the mouth.

the patient complains of pain referred to that organ, and nausea; whatever is taken is rejected by vomiting, and often mixed with blood.

Similar symptoms attend their presence in the intestines, a general sense of soreness is felt in the abdomen, and the stools are often bloody.

After the blisters have remained for an uncertain time, from one to several days, they either break, discharging in some cases a yellowish bland, in others a sharp ichorous fluid;* or they begin to shrink, and in a short time disappear. And this perhaps is the most favorable termination, since when they break they sometimes leave troublesome ulcers.†

The

* It sometimes happens in the same case, that the fluid in some of the vesicles is ichorous, in others bland. See the Observations of Dr. Stewart, above alluded to.

† Mr. Blagden observes of one of his patients, in whom the vesicles broke, "It was very evident that the "child had suffered extremely from the soreness of "those on the waist, which were not completely "healed in less than two months." It is uncommon however

The foregoing process does not proceed on every part of the body at the same time, for the vesicles which first appear soonest subside.

From perusing the cases of pemphigus, which have been accurately described, we should be inclined to think that the eruption in this complaint is most apt to attack internal parts when the matter of the vesicles on the surface is absorbed; from one or two instances however no general conclusion can be drawn. It is said, that in a pemphigus which raged in Switzerland, in which the eruption often attacked the fauces, these parts were always most affected when the skin was least so; but there is reason to believe that the vesicular fever has sometimes been confounded with the scarlatina, and from this circumstance perhaps the foregoing observation took its rise.

Pemphigus resembles the small-pox, in frequently leaving pits in the skin; and in the parts which the vesicles occupied, re-

however for them to be troublesome for so long a time.

maining for a considerable time afterwards of a dark colour. *

The time during which new vesicles continue to come out is as uncertain as their duration. According to Dr. Cullen's definition, no fresh vesicles appear after the third day, but this we have seen by no means applies universally. †

Swellings and abscesses of the parotid,

* Dr. Winterbottom, in the third volume of the Medical Facts and Observes of one of his patients, "When I first saw him," which was some time after he had had the disease, "his face and legs "were covered with spots nearly of the size of a six-"pence, resembling the marks left by the small-pox. "Many of these were attended with considerable de-"pression of the skin, in so much as to produce "suspicion, among persons not much acquainted with "the disease, of his really having had the small-pox. "The discolouration of the skin," he adds, "was not "entirely removed for a twelvemonth after the disease "had left him, but was still very evident in cold "weather." Mr. Blagden makes similar remarks, "The vestiges of five of the largest of these vesicles "and of two on the forehead will ever remain."

† In chronic cases they have continued to come out for a great length of time. See a case related by Mr. Christie.

inguinal

inguinal, and axillary glands, have frequently accompanied this eruption; and as in other cases of continued fever accompanied by these swellings, the safety of the patient seems often to depend on the matter formed in them being discharged.

The vesicular eruption seldom brings relief to the febrile symptoms, but the prognosis in this variety of fever is in some respects influenced by its seat and appearance. When the vesicles are not numerous and only appear on external parts, they demand little attention; when they are numerous, when they attack the alimentary canal and are attended with a small hard pulse, the danger is considerable and is, cet. paribus, proportioned to the degree of these symptoms.

When the ulcers left by the vesicles, although external, appear livid, shewing a tendency to gangrene, which seldom happens unless in well marked typhus, the danger is very great. Even in idiopathic cases of this eruption, where there is no fever of any kind, gangrene sometimes

 supervenes,

supervenes, and then there is danger;* though in general, Burserius observes, where there is no fever, the vesicular eruption is unattended by danger.

Of the Symptoms preceding and attending the Vesicular Eruption.

In some cases this eruption is preceded, like those which have been considered, by anxiety and depression, but more generally it appears without being preceded by any peculiar symptoms.†

A degree of coma, it was observed, frequently precedes the appearance of the miliary and aphthous eruption, and this we shall find is a frequent forerunner of most of the eruptions we shall have occasion to consider. It has not been observed however particularly frequent in the vesicular fever, nor is

* Burserius relates a case of this kind which terminated fatally.

† It appears, from what was said of one of Dr. Dickson's patients, that when the eruption is about to appear in the mouth, it is sometimes preceded by a peculiar sensation and change of colour in the parts which it is about to occupy.

this

this eruption generally accompanied with any peculiar symptoms, besides those already enumerated, which the eruption itself occasions.

Of the Febrile States in which the Vesicular Eruption most frequently appears.

We still find the symptomatic eruptions most apt to shew themselves in those fevers in which the typhus prevails. This will appear from the following account, extracted from authors who regard the vesicular fever as an idiopathic complaint.

In the commencement of pemphigus, as in other fevers, the patient droops and is averse to every kind of exertion. The symptoms of the cold stage are generally well marked, attended with head-ach, sickness, and oppression, the pulse is frequent, seldom strong and full, and delirium is a frequent symptom.

It appears from what was said of the definition of the synochus vesicularis, that there is no particular period of the fever at which the eruption shews itself. It now and then appears in other complaint as well

as in the synochus. See an account of the Cynanche Maligna in the Acta Helvetica, by Dr. Langhans. There is reason to believe, that in several epidemics which raged in different parts of the Continent, the vesicular eruption attended this complaint, but the accounts of them are far from being distinct.

It has just been hinted, that the vesicular eruption has appeared as an idiopathic affection unaccompanied by fever. Cases of this kind are related by Dr. Winterbottom, and Mr. Gaitstkell in the 4th vol. of the Mem. of the Med. Soc. of London. Burserius speaks of this eruption without fever as a frequent occurrence.

2. Of the Causes of the Vesicular Fever.

The vesicular fever was unknown to the Greek, Roman, and Arabian writers.

Some indeed assert that mention of the pemphigus is to be found in the writings of Hippocrates and Galen; but this seems to be a mistake. There is reason to rank it among those varieties of disease which have only made their appearance in modern times.

times. Sauvages considers it as described by Bontius in his Medicina Indorum; but Dr. Dickson asserts, that, except one case related by Carolus Piso, he can find no distinct account of it in any author before the days of Morton, who took notice of this disease towards the end of the last century,* but without describing it particularly.

Sauvages met with it himself in the hospital of Montpellier, near the beginning of the present century, and gives the following account of it, "Pemphigus, febris est acuta "exanthematica bullis seu ampullis pellu- "cidis avellanæ magnitudine, per corpus "enascentibus insignita." Since his time this disease has been described by various authors; most of what they say of it however consists in the narration of particular cases, if we except some, for the most part indistinct, accounts of it, as it raged on different parts of the Continent.

* Burserius even doubts whether the complaint mentioned by Morton be the pemphigus; of this however there can be little doubt. See what is said in the 42d and 43d pages of the Introduction.

As

As little has been determined concerning the causes of the vesicular eruption, as those of perhaps any other complaint. There is one case in which it occurred three times in the same patient, during a long interruption of the menses, and another in which it occurred twice, each time attacking the patient on a visit to a cold climate;* yet there are thousands exposed to these causes without having this eruption. It appears from these cases, as well as one related by Dr. Hall, in Dr. Duncan's Annals of Medicine, that the disease is apt to attack the same person more than once, and that it probably, like some other symptomatic eruptions, particularly the erysipelatous and miliary, leaves behind it a predisposition to future attacks.

As with respect to other eruptive synochi, some disputes have arisen concerning the contagious nature of vesicular fever. Most foreign writers regard it as contagious, and some of the cases mentioned by

* See the observations of Dr. Winterbottom and Mr. Christie.

British

British practitioners seem to support this opinion. Mr. Blagden thought that one of his patients received it from the other.

Many, on the contrary, under this disease, have been admitted into public hospitals without communicating it to their fellow patients; and in most of the cases of pemphigus that have occurred in Britain, it has appeared in a single person, and spread no farther. In none of those mentioned by Dr. Dickson, Dr. Stewart, Dr. Winterbottom, and Mr. Christie, did this complaint appear contagious, nor was it so in the case which Dr. Cullen saw. Dr. Hall inoculated with the matter of the vesicles without producing the disease.*

It has been proposed to divide pemphigus into two kinds, the one contagious, the other not so. The reader will find an attempt of this kind in the 1006th paragraph of Burserius's Institutiones Med. Pract. The contagious pemphigus, he observes, is

* See Observations on the Pemphigus Major of Sauvages, by Dr. R. Hall, in Dr. Duncan's Annals of Medicine for the year 1799.

always

always accompanied with much fever, and symptoms of malignity; whereas in that which is not contagious, the fever is either moderate or absent. For several reasons however, which will readily suggest themselves from what has been said, this division seems to be inadmissible. It is more than probable, that it has in part arisen from confounding the cynanche maligna with the synochus vesicularis.

The truth seems to be, that the vesicular, like other symptomatic eruptions, appears both in fevers which are and are not contagious; and it seems probable, that like these also it will sometimes be propagated with the fever and sometimes not, but it does not appear, as in the case of the miliary eruption, what the circumstances are which determine the vesicular to appear in fever.

3. Of the Treatment of the Vesicular Fever.

The same prejudices which for many centuries did, and in many places still, influence the treatment of other fevers, have been

been extended to that of pemphigus. "In Switzerland," says M'Bride,* "the physi- "cians began the cure with one or two large "bleedings, then blistered the head, laid "cataplasms on the neck, and endeavoured "to raise sweats by sudorific medicines."

As the pemphigus was considered a complaint essentially different from common fever, particular modes of practice have been tried, and specifics looked for. "In Bohemia," Dr. M'Bride continues, "the only medicine which did service was "the acetum bezoardicum, and this is said "to have cured all who took it, while "those who trusted to other things died." It seems more surprizing, that Dr. M'Bride should credit this assertion, than that Thierry the practitioner who makes it, should either himself have been deceived, or wished to deceive others.

Calomel in small doses, followed by a saline purge, has been employed by British practitioners. Small doses of tartar emetic

* See his Introduction to the Theory and Practice of Medicine.

have

have also been recommended, and these medicines, as in other cases of fever, are often serviceable. There is at least more to be hoped from them, than from the acetum bezoardicum, and much less to be apprehended than from profuse and repeated bloodletting, in a complaint where debility is what we chiefly dread.

The result of all that has been written on the treatment of pemphigus, as far as I am capable of judging, seems to be, that it is the same as in simple synochus, with the addition of local remedies for the eruption, which in general seems very little to modify the fever.

With regard to the local remedies, the larger vesicles are generally opened,* and kept clean; when any have appeared in the mouth and formed ulcers there, demulcent and detergent gargles are to be employed. When the ulcers either there or on other parts of the body become obstinate, they are to be treated by the surgeon, and therefore do not fall to be considered here.

* The propriety of opening them is doubtful.

If

If there is reason to think, that the eruption has spread to the alimentary canal, copious draughts of some mucilaginous decoction are proper, and when the irritation is considerable and prevents sleep, if the symptoms of the fever admit of it, opiates should be exhibited, except inflammation of the stomach or bowels has supervened; cases which will be considered when speaking of the phlegmasiæ.

SECT. V.

Of the Erysipelatous Fever.

THE Erysipelas* is defined by Dr. Cullen, "Synocha duorum vel trium dierum, "plerumque cum somnolentia, sæpe cum "delirio.

* Erysipelas is the name given this complaint by the Greeks; by the Romans it was termed ignis sacer, or merely, ignis, by which appellation it is known in many parts of the Continent; but none of these terms have been used in a very definite sense. Sennertus calls it rosa; authors however have not adopted this name. By the vulgar of this country it is called the rose or St. Anthony's fire; foreign writers generally confine

" delirio. In aliqua cutis parte, sæpius in " facie, phlogosis * erythema."

It was observed in the Introduction, that, although I have arranged the erysipelas as a variety of synochus, because, like the foregoing complaints, it has been arranged among the exanthemata, yet if the view there taken of it be just, and that it is so will I think appear more fully in considering

confine the latter appellation to Dr. Cullen's second species of it, which is also termed zona or zoster; and the erysipelas of the face has been termed sideratio.

* Phlogosis Dr. Cullen defines, " Pyrexia, partis ex- " ternæ rubor, calor, et tensio dolens."

The erythema is his 2d species of phlogosis, which is defined, " Phlogosis colore rubicundo, pressione " evanescente; ambitu inæquali serpente; tumore vix " evidente, in cuticulæ squamulas, in phlyctænas vel " vesiculas, abeunte; dolore urente." Dr. Cullen makes pyrexia part of the definition of phlogosis, and yet introduces synocha into the definition of erysipelas, in which phlogosis is mentioned. If pyrexia and synocha are not synonimous terms in these definitions, the definition of erysipelas contains a contradiction; if they are synonimous terms, synocha in this definition is evidently superfluous. This inaccuracy proceeds from a defect in Dr. Cullen's mode of arrangement, considered at length in the Introduction. See the 8th and following pages of the Introduction.

its

its symptoms, causes, and mode of treatment, it should be regarded as a combination of two complaints, of synochus, and Dr. Cullen's second species of phlogosis, the erythema, and consequently should have no place in a system of nosology. We shall here find the eruption forming a much more important part of the complaint than in the preceding varieties of synochus, modifying the general plan of treatment as well as the symptoms of the fever.

1. Symptoms of the Erysipelatous Fever.

Of the Erysipelatous Eruption.

This eruption appears in the form of a red blotch or stain, which spreads with more or less rapidity. The redness sometimes disappears on pressure; sometimes it does not, arguing the inflammation having spread deeper.

It is generally attended with a sense of burning and a pungent pain, but for the most part without tension or pulsation; and the inflamed skin is not raised above that which surrounds it. The parts beneath

however, as well as those in the neighbourhood, are generally affected with some degree of swelling, which often remains after the redness has disappeared or removed to some adjacent part; for this eruption is apt to leave, or become less considerable on, the parts it first occupied, when it spreads to others. But in this respect there is much variety.

After the redness has been present for an uncertain time, blisters of various sizes sometimes rise on the skin, generally containing a thin, sometimes limpid, sometimes yellowish fluid. In some cases the fluid is viscid,* and instead of running out, as generally happens, when the blister is broken, adheres to and dries upon the skin.

In unfavorable cases these blisters sometimes degenerate into obstinate ulcers, which now and then become gangrenous. This however is a rare accident, for although it is not uncommon for the surface of the skin, in the blistered places to appear livid or even blackish; yet the tendency to gan-

* See Tissot's Avis au Peuple.

grene

grene seldom spreads deep, and generally disappears with the other symptoms of the complaint.

The red colour changes to yellow as the eruption goes off, and the parts on which no blisters arose often suffer a desquamation. If the colour of the eruption change from a red to a purple or blackish hue, the prognosis is bad ; but this is comparatively rare.*

When the eruption has spread deeper than usual, suppurations sometimes take place, and it has sometimes happened, that erysipelas has renewed ulcers which had been long healed.†

The period of the eruption at which the vesicles shew themselves is quite uncertain ; the same may be said of the duration of the eruption. In mild cases it often gradually disappears, or is carried off by sponta-

* Platerus, Hoffman, and others, mention cases in which erysipelas terminated fatally by gangrene in old people. In the typhus gravior it is apt to terminate in this way, as will presently be more particularly observed.

† See a case of this kind in the 6th number of Desault's Chirurgical Journal.

neous sweating, in a day or two. In some cases it continues without beginning to decline for twelve or fourteen days, or longer.

The erysipelas has had different appellations according to the appearance of the eruption, erysipelas benignum, malignum, gangrenosum, tuberculosum, scabrum, vesiculosum, pustulare, &c.*

Such is the general appearance of the erysipelatous eruption, but there is some variety in its appearance, according to the part of the body it occupies.

In the mildest cases it appears on the extremities; often on the feet, and then if the febrile symptoms are moderate, if the eruption does not spread rapidly, and is only attended with a degree of itchiness or burning, or slight pain resembling the stinging of nettles, there is reason to believe that it will not prove troublesome, and will be of short duration.

In more severe cases the eruption gives more uneasiness and spreads with more rapidity. If it has appeared on the foot, it

* See Burserius's Institut. Med. Pract.

extends

extends along the leg, the skin over the tibia becoming highly inflamed, stretched, and glossy.

In such cases the patient sometimes complains of tension and a sense of pulsation. This kind of pain however, as will be observed more particularly in considering the different kinds of inflammation, is not characteristic of the erysipelatous.

When the inflammation of the extremities is considerable, sharp pains, increased by the slightest touch, often shoot along the muscles, and the limb is generally much swelled. Erysipelas of the feet and legs sometimes leaves an obstinate œdema.

If the eruption attacks the trunk, the complaint is generally more severe. When it attacks the breasts of women, it is often attended with much pain, the breasts swell, become hard, and sometimes suppurate. The pain is also severe when it attacks the arm pits. In these and other glandular parts it often leaves the glands in a state of induration.*

Upon

* Erysipelas in glandular parts, Schroeder observes,

Upon the whole, the erysipelatous eruption much less frequently attacks the trunk than the extremities. There are two varieties of it however, which appear on the trunk and deserve to be particularly mentioned.

The first may be termed the erysipelas infantum. This appears in children soon after birth, begins about the umbilicus, and often spreads over the whole abdomen.* It is not very uncommon indeed for children to be born with the face or belly, particularly the parts about the umbilicus, uniformly red and swelled. It is more common however for the erysipelas to appear a few days after birth, and it frequently makes its first attack about the genitals.

especially if cold astringent and spirituous applications have been made to it, sometimes leaves behind it schirrus of the part. See Schroeder de Febre Erysipelatosa, in his Opuscula Medica.

* See an account of this species of erysipelas in two papers, one by Dr. Bromfield, and another by Dr. Garthshore, in the 2d vol. of the Medical Communications, and also in Hoffman's Practice of Medicine, and in Dr. Underwood's Treatise on the Diseases of Children.

The

The inflamed skin is hard, and apparently very painful to the touch.

This species of erysipelas is more apt than others to terminate in gangrene. The belly often becomes uniformly tense, and sphacelated spots make their appearance. Dr. Bromfield relates one case in which the gangrene in the extremities spread so deep that several joints of the fingers were separated. Any appearance of gangrene in this form of the disease affords a bad prognosis, and recovery is very rare when it spreads so deep as in the case just alluded to.

Suppuration also, though more rarely, occurs in the erysipelas infantum.

It appears from dissections mentioned by Dr. Underwood, that in this form of the disease the inflammation frequently spreads to the abdominal viscera.

The other species of erysipelas, attacking the trunk, which deserves particular notice, is Dr. Cullen's second species, the erysipelas phlyctænodes,* which he defines "Erysipelas

* It is this species of erysipelas which has been

" sipelas erythemate ex papulis pluribus,
" trunci corporis partes præcipue occupan-
" tibus, et protinus in phlyctænas, sive ve-
" siculas parvas, abeuntibus."

This complaint, it was observed in the Introduction, is not very properly ranked as a variety of erysipelas, the appearance of the eruption differing considerably from that above described. Instead of appearing an uniformly inflamed surface, it consists of a number of little pustules,* which in a short time have vesicles formed on them. It generally surrounds the trunk, and appears like a red belt thrown around the body a little above the umbilicus, from which it has got the name of zona. It is not always however confined to this part. Dr. C. Smith says, he has seen it spread round the neck and shoulders.

termed zona or zoster. In English it is called the shingles. See the 2d vol. of Burserius's Instit. Med. Pract. Schroeder de Feb. Erysip. in his Opusc. Med. and Vogel Prælect. Acad. de Cog. et Cur. Morb.

* When narrowly inspected however, the erysipelas on other parts of the body sometimes has more or less of the same appearance.

This

This is generally regarded as more dangerous than other forms of erysipelas affecting the trunk and extremities. And Schroeder indeed regards it as the most fatal of all the varieties of this disease. Dr. Smith however remarks, "This species of erysipelas has been accounted extremely dangerous, which character it surely does not deserve, unless where the patient is in the decline of life, or the liver or some of the viscera are in a diseased state, or the patient is in other respects in a bad habit of body. I have frequently seen the disease in children and in young people," he adds, "without a single alarming symptom."

When the erysipelatous eruption attacks the face and head, it is most dangerous. It has then the same appearance as when it attacks other parts of the body.

A red spot appears on some part of the face, generally of no great extent, but which spreads till it sometimes covers, not only the whole face, but the scalp also, now and then descending a considerable way down the neck, and occasioning what

Tissot

Tissot calls; "Esquinancie tres facheuse."

As in other cases, it often leaves the part it first attacked, when it spreads to neighbouring parts.

The face and frequently the whole head swell, sometimes to such a degree that the eyes are closed, so that Sydenham * observes, the patient looks like a person under the small-pox, only there are no pustules. The tumors of the eye-lids sometimes terminate in suppuration.

The duration of the eruption on the face, as on other parts of the body, is various. It generally lasts eight or ten days, sometimes longer. Desault in his Surgical Journal mentions a case in which it lasted 23 days. The uncertainty of the duration of symptomatic eruptions is another circumstance in which they differ from the exanthematic.

The greater danger of erysipelas when it attacks the face, arises chiefly from the inflammation being apt to spread to the brain. There is reason indeed to believe,

* See Sydenham de Feb. Erysipel.

from

from symptoms that will presently be enumerated, that the inflammation sometimes attacks the brain at the same time, or even before, it appears on the face.

More rarely the erysipelas of the face spreads to the fauces and along the alimentary canal, which is also a very alarming accident. This form of erysipelas is also apt to spread to other internal parts. Sometimes, Schroeder* observes, it spreads to the nares, trachea, and thence to the lungs, producing all the symptoms peculiar to inflammation of these parts.

It has just been observed, that when the erysipelatous eruption attacks the neighbouring parts, it often leaves that it first occupied; sometimes it removes suddenly to distant parts, what physicians have termed Metastasis takes place; the inflammation leaving the skin, seizes on some of the viscera.

The viscus most commonly affected is the brain, but for the most part, Dr. Cullen observes, the brain is not affected by metas-

* Opuscula Med.

tasis,

tasis, but merely by a spreading of the inflammation ; as in all the cases he saw, the external affection continued and increased with the internal.

Other viscera are sometimes but more rarely affected, on the sudden retrocession of the erysipelatous eruption, whether of the face or other parts. In metastasis of this disease, Schroeder observes, the inflammation also seizes the intestines, liver, uterus, and bladder. I shall hereafter have occasion to make some observations on attempts which have been made to distinguish erysipelatous inflammation of internal parts from what is called phlegmonous. In the latter, the inflammation extends deeper, and differs otherwise from the erysipelatous, particularly in being more apt to terminate by suppuration.

The erysipelas sometimes is not confined to any particular part of the skin, but spreads equally over the face, trunk, and extremities. Cases of this kind are rare; the reader will find such mentioned by Vogel and others. Sometimes, says Schroeder, the erysipelas spreads over every part of the body

body, from the head to the ends of the fingers. This most frequently happens in the erysipelas infantum.

In certain countries the erysipelas seems most disposed to attack particular parts of the body, thus Sauvages observes, that in Germany, the erysipelas generally seizes on the groin, thighs, and arm pits; in England and in France it more frequently attacks the face.

Such is the appearance of the erysipelatous eruption and the manner of collecting the prognosis, as far as it depends on the eruption.

It appears from what has been said that the prognosis is particularly influenced by the seat of the eruption; in the extremities it is safer than in the trunk, in the trunk than in the face, and, cet. par. the more extensive the inflammation the greater is the danger.

Suppuration in general is to be regarded as an unfavourable termination, as it frequently, especially in the face, leaves troublesome ulcers. For when erysipelas produces suppuration, it is seldom of the favourable

vourable kind.* Quarin however, on the authority of Strack, mentions an epidemic erysipelas, in which those recovered in whom suppuration took place, those died in whom it did not. We have reason to believe that suppuration will occur, when we find the inflammation spreading deeper than usual, which is known by the redness not disappearing on pressure, the pains being deeply seated, and the swelling considerable and hard.

It was observed above, that a degree of gangrene often appears on the blistered parts, and if the habit of body be good, and particularly if the eruption still retains the florid appearance, this tendency to mortification is generally superficial; but if the patient is much debilitated, especially if he is advanced in life,† and the eruption assumes a purple or livid hue, the mortification often spreads deep, and the danger is very great.‡

* See an account of the Epidemic Erysipelas, by Tissot and others.

† See the observations of Platerus on what he terms Macula Lata.

‡ See Vogel de Cog. et Cur. Morb.

Of

Of the Symptoms which precede or attend the Erysipelatous Eruption.

The symptoms which frequently precede the erysipelatous eruption are similar to those which precede the foregoing eruptions; and this, like the others, sometimes appears without being preceded by any peculiar symptoms.

Before the appearance of the erysipelatous eruption, the oppression and anxiety are often considerable, and frequently attended with other symptoms denoting derangement of the primæ viæ, a bitter taste in the mouth, foul tongue, head ach, confusion of thought, vertigo, nausea, and even vomiting and purging, generally of bile. Most of the foregoing eruptions we have found connected with the state of the primiæ viæ; this connection is not more remarkable in any than in the erysipelatous. Anxiety, pain of the stomach, eructations, dyspnœa, nausea, and bilious vomiting, are enumerated by Burserius among the symptoms preceding this eruption. "Accedit "non raro," Schroeder observes of the same period

period of the disease, " ciborum fastidium, " sapor amarus, nausea, conatus vomendi, " aliquandò etiam vomitus;" and in another place, " Sæpissime autem signa colluviei " vitiosæ, præsertim biliosæ ad primas vias " apparent." Dr. Smith says, he has often seen erysipelatous blotches in fever where the redundancy of bile was apparent. Tissot and others make similar observations.

Such are the principal forerunners of the erysipelatous eruption when about to appear on the trunk and extremities. But when it is about to attack the face, some of these symptoms, (particularly the affections of the head, which in such cases often rise to delirium) are almost always accompanied with a greater or less degree of coma,* and the eruption generally appears upon the

* More or less coma, as in other eruptive fevers, often precedes the eruption in erysipelas, whatever be the part of the body which the inflammation is about to occupy; but if the eruption is about to appear on the trunk or extremities, the coma is much less uniformly present, and generally less considerable, than when the inflammation is about to appear on the face.

face

face one, or two, at most three days after these symptoms shew themselves.

It is from the state of the brain in erysipelas of the face, that we chiefly collect the prognosis. When neither delirium nor coma have preceded the eruption, which indeed is rarely the case, nor supervened after its appearance, there is generally little or no danger, if the symptoms of the primary disease, whether it be fever or any other, are not alarming. But when a considerable degree of coma or delirium has preceded the eruption, and still more when the coma, which often happens, rather increases than abates after its appearance, there is reason to believe that the inflammation has spread to the brain, and the danger is then very great.

When the coma is considerable from the beginning of the disease, it indicates that the inflammation first seized on the internal parts, and then, in a nosological point of view, the complaint must be regarded in the same light as when the external inflammation is the first symptom of the complaint, that is, it must be regarded simply as a case of phlegmasia; and we shall find

 that

that the treatment which experience has established as most successful, is the same as in other phlegmasiæ.

From what was said of the tendency of erysipelas to attack internal parts, it will readily be perceived, that the symptoms which occasionally attend this eruption must be very various. We shall have occasion to consider at length the various symptoms which accompany inflammation of the different viscera, when considering the phlegmasiæ.

Of the Febrile States in which the Erysipelatous Eruption is most apt to appear.

The erysipelatous eruption differs from the eruptions we have been considering, and agrees with inflammations, in appearing more frequently in synocha than in typhus. On this account it generally appears early in fevers; so that although we find authors differing about the time of its appearance, it seems to be generally admitted, that it seldom shews itself later than the fourth or fifth day; but within this period the time of its appearance is as uncertain as that of any other eruption which has been mentioned.

It

It sometimes appears after the fever has lasted only a few hours, in many cases on the second, third, or fourth day; and when the fever has begun to assume the form of typhus before the eruption shews itself, if the patient's strength is not much reduced, it resumes that of synocha, the strength and the fullness of the pulse increasing, often attended with a considerable degree of hardness. Other inflammations supervening on the typhus mitior, often have the same effect, a consequence that never attends any of the preceding eruptions, which all tend to increase the symptoms of debility.

As the erysipelatous eruption is most apt to attend the synocha, and as the more alarming fevers generally incline to typhus at an early period, it is in the milder forms of fever that this eruption most generally appears. But in erysipelas of the face, the brain is often affected before the inflammation shews itself externally.* This inflam-

* As has just been observed, in enumerating the symptoms which precede this species of erysipelas, and as will more fully appear when we consider the diagnostic symptoms of phrenitis.

matory affection of the brain, while it induces coma, often preceded by severe head-ach, sometimes by a greater or less degree of delirium, at the same time increases all the febrile symptoms; so that although the fever which precedes erysipelas of other parts of the body is seldom alarming, that which precedes erysipelas of the face frequently is so.

In such cases we have every reason to believe that the inflammation, although it does not show itself externally for some days after the commencement of the disease, is in fact the primary complaint, the fever being only symptomatic of it; and the treatment which has been found most successful, which is by no means that of an idiopathic fever, sufficiently warrants this opinion.

The erysipelas of the face sometimes appears without any previous affection of the brain, and then it is often observed to appear also without previous fever. Sydenham mentions an erysipelas in which the affection of the face was the first symptom of the disease. "Facies siquidem ex improviso in

"tumorem

" tumorem attollitur, qui subito exorsus
" cum dolore ruboreque summis, denso mi-
" nimarum pustularum ordine distinguitur,
" quæ, aucta magis inflammatione, vesicu-
" las subinde facessunt."

This eruption, like other inflammations, instead of relieving, increases the febrile symptoms, the pulse becomes harder, the nostrils, fauces, and skin more parched, and the breathing more laborious, so that the general, keeps pace with the local, affection. " Procedente morbo," says Sydenham of the erysipelas, " uti plurimum
" febris, dolorem, tumorem, atque alia pe-
" perit symptomata (quæ indies ingraves-
" centia nonnunquam in gangrena termi-
" nantur), ita hæc invicem haud mediocrem
" ad febris augmentum conferunt operam,
" donec remediis idoneis utraque restin-
" guantur." " The pain," Dr. M'Bride observes, " from the inflammation, keeps up
" the fever, until both are taken off by
" proper remedies."*

Nor

* In some rare cases however, the erysipelatous eruption has proved critical. The reader will find

Nor is the affection of the brain in general relieved by the appearance of the inflammation externally, the coma often increasing as the inflammation extends; so that as this inflammation, when it makes its first attack on the face, sometimes spreads to the brain without leaving the face; when it makes its first attack on the brain, it is apt in like manner to spread to the face without leaving the part it first occupied, which always affords an unfavorable prognosis.

When the fever does not increase much after the appearance of the eruption, and the coma begins to abate, the prognosis is good. Soon after this the eruption generally begins to assume a yellowish hue, and all the symptoms, both local and general, gradually abate.

Such is the general course of erysipelas of the face, and the circumstances which influence the prognosis. But Van Swieten justly observes, that it is no mark of ignorance in the physician, although he may

cases mentioned by Van Swieten and others in which the fever ceased on the appearance of this eruption.

have

have considered the patient in a state of safety, when he was within a few hours of death; he has often seen cases, he continues, which from being accompanied with no alarming symptom, often suddenly indicated so much danger that death was hourly expected, the inflammation having attacked the membranes of the brain. It sometimes happens, Tissot observes, that without any apparent fault of the patient or practitioner, the inflammation suddenly changes its seat, attacking the brain or lungs, and then the patient is often carried off in a very short time, although, previous to the metastasis, there seemed little or no danger.

It has been observed above, that the erysipelatous eruption often makes the fever resume the character of synocha after the typhus had commenced; this however is only where the symptoms of typhus are not strongly marked. When this eruption appears in the typhus gravior, which is not a very frequent occurrence, instead of changing the nature of the fever, the eruption partakes of its nature, shewing a strong tendency to gangrene, increasing the debi-

lity, and consequently adding to the unfavorable prognosis. The complaint is then, what has been termed by foreign authors, febris erysipelatosa maligna or pestilens: A form of the disease little known in this country. On different parts of the Continent it has sometimes been epidemic, as at Thoulouse in the year 1716, where it appeared in so dreadful a form, that it was compared to the plague, and proved little less fatal. This epidemic is analogous to those mentioned by De Haen,* Bartholine,† Professor Silvius de la Boe,‡ and others, in which an inflammation of the stomach and duodenum accompanied the fever.

The erysipelatous eruption is apt to appear in other complaints besides fever. Among the chief of these, Schroeder enumerates dropsy, jaundice, wounds, particularly those of the cranium § injuring the membranes of

* Ratio Medendi.

† Hist. Anatom. Rar. hist. 56.

‡ Prax. Med. Append. tract. x.

§ Gunshot wounds are particularly apt to produce erysipelas, and all wounds, Dr. Smith observes, which are attended with much laceration.

the

the brain, fractures, or considerable abscesses in any part of the body. Erysipelas from wounds, Quarin observes, affords a bad prognosis. Erysipelas also frequently attends schirrus, and cancerous or other considerable ulcers. It also frequently accompanies diseases, occasioning derangement of the primæ viæ, particularly worms, and is often one of the effects of poisonous injesta.

The terms erysipelas and erythema have been used by authors in a very vague sense, the former having been assumed both as the name of the complaint, and of the eruption which characterises it. Sauvages and Cullen however have confined the term erysipelas to the former; and the eruption, with its consequences, they have termed erythema. But this eruption frequently occasions fever, so that Dr. Cullen has found much difficulty, both in his nosology and practice, in distinguishing the erysipelas and erythema, and this difficulty will be readily perceived when the reader is informed that the eruption termed erythema is often preceded by slight indisposition, hardly,

hardly, and sometimes not at all, affecting the pulse, so that it is difficult to say whether it has been preceded by fever or not, and consequently whether, according to Dr. Cullen's definitions of these complaints, it is to be regarded as a phlegmasia or exanthema.

If we confine the term erythema to those cases where no symptoms of general derangement have preceded the eruption, we shall include under the term erysipelas a disease which hardly at all differs from erythema. Yet we must distinguish between the erythema, a disease evidently referable to the phlegmasiæ, and in which the mode of treatment is the same as in other phlegmasiæ, the fever being merely symptomatic; and the erysipelas, in which the fever is as evidently idiopathic, and must, as experience has taught, be treated as such, except as far as it has been modified by the appearance of the local affection.

The only way, as far as I can judge, to remove the difficulty, is either altogether to lay aside the term erysipelas, regarding what

what is at present called erysipelas as a combination of erythema and simple fever; or, what would be preferable, to confine the term erythema to express the local affection, the simple inflammation which sometimes occurs without fever, and apply that of erysipelas to the phlegmasia, namely, to those cases in which the inflammation occasions fever,* giving no name to the combination of synochus and erysipelas, which never assumes the appearance of an exanthema; we might as well give a name to the combination of worms and erysipelas. According to this view of the complaints, the term erysipelas would be confined to the cases in which the local affection is either preceded by no symptoms of general derangement, or by such as frequently precede the local affection in the other plegmasiæ.

The inaccurate use of the foregoing terms forces Dr. Cullen into a mode of arrange-

* The reader will find, in perusing the works of those who treat of erysipelas, that the nature of the complaint constantly leads them unintentionally to use these terms nearly in this sense.

ment

ment in his System of Practice, by which the consideration of that form of erysipelas in which the eruption appears on the trunk or extremities is altogether omitted, for Dr. Cullen, finding the symptoms which precede the eruption on these parts often so trifling as hardly to be perceived, and sometimes altogether wanting, so that the complaint had little if any appearance of an exanthema; but observing at the same time, that the preceding symptoms were very generally considerable when the eruption was about to appear on the face and head; in treating of erysipelas he considers this case alone. He expresses the difficulty in the 697th paragraph as follows: "I suppose "the erysipelas to depend on a matter "generated within the body, and which, "analogous to the other cases of exanthe-"mata, is in consequence of fever thrown "out on the surface of the body. I own "it may be difficult to apply this to every "particular case of erysipelas, but I take "the case in which it is generally supposed "to apply, that of the erysipelas of the "face, which I shall therefore consider "here."

"here." Dr. Cullen therefore leaves other cases of the disease, if they are considered at all, to be arranged among the phlegmasiæ. According to his view of the disease then, if the eruption in erysipelas appears on the face, the complaint is an exanthema; if on the trunk or extremities, a phlegmasia. Can this view of the disease be accurate? Besides, how shall we arrange the case above described in a quotation from Sydenham's Treatise on Erysipelas, in which the eruption on the face was the first symptom of the complaint?

The foregoing view of this disease obviates every difficulty, and is supported, as far as I know, by every fact on the subject. The erysipelas is a phlegmasia, which like gastritis, enteritis, or any other phlegmasia, sometimes occurs in idiopathic fevers.*

* The justness of this view of the complaint will be sufficiently apparent, I hope, on comparing what is about to be said of the causes and treatment of erysipelas, with what will be said in the next volume of the nature of the phlegmasiæ, and the maxims which conduct our practice in this order of symptomatic fevers.

Different

Different divisions of erysipelas into varieties have been proposed by authors, none of them however are of much use in practice. I have already had occasion to allude to the division into febris erysipelatosa benigna, and febris erysipelatosa maligna. A variety of divisions of this complaint has been adopted by Celsus, Fernelius, Hoffman, and others, founded on the appearance of the eruption, according as the inflammation is more or less superficial, as vesicles do or do not supervene, and do or do not leave ulcers behind them; and the ulcers being superficial or deep, well conditioned or otherwise, have also afforded other useless divisions.*

2. Causes of the Erysipelatous Fever.

In the causes, as in the symptoms of erysipelas, we still find it partaking of the nature of the phlegmasiæ; with these it agrees, and differs from symptomatic erup-

* See the 3d chap. of the 4th book of the Pathology of Fernelius, and Schroeder's Opusc. Med. See also a division of erysipelas, equally objectionable, in Burserius's Institut. Med. Pract.

tions,

tions, in having been known from the earliest times.

With regard to the predisposing causes, those most disposed to this complaint are the young and people in the vigour of life, especially those of a sanguine and choleric temperament, and of a phlethoric habit. Like the other phlegmasiæ, it is most apt to attack those who formerly laboured under it.

The exciting causes of erysipelas also are the same with those of the phlegmasiæ. One of the most frequent, particularly in those who have formerly laboured under it, is cold, especially if alternated with heat, as in variable weather. It is sometimes the consequence of excessive heat, too full a diet, particularly the abuse of fermented liquors, the suppression of any habitual discharge, as the drying up of an issue, suddenly checking hemorrhois, or abstaining from habitual blood-letting, or any other cause of plethora.

It is frequently re-produced by local irritation, whether chymical or mechanical. "As I have known erysipelas," Dr. Cullen observes,

observes, "with all its symptoms, arise "from an acrimony applied to the part, as "it is commonly attended with a full and "frequently with a hard pulse, as the blood "drawn in this disease shews the same "crust upon its surface as appears in the "phlegmasiæ, and lastly, as the swelling "of the eye-lids in this disease frequently "ends in suppuration; so from these con-"siderations it seems doubtful, if this dis-"ease be properly in nosology separated "from the phlegmasiæ; at any rate I take "the disease I have described to be what "physicians have named the erysipelas "phlegmonodes, and that it partakes a "great deal of the nature of phlegmasiæ."

In some of its other causes the erysipelas appears to bear a stronger analogy to other symptomatic eruptions. It has been observed of all of these, that they seem frequently to arise from derangement of the primæ viæ. This is not more remarkably the case with any eruption than the erysipelatous. Such derangement indeed seems one of its most frequent causes. Purging, says Tissot, is in general necessary to evacuate the corrupting

rupting bile from the primæ viæ, which is the most frequent cause of erysipelas. Such is the connexion of this complaint with the primæ viæ, says Schroeder, that we often wholly remove the disease by removing the irritating matter, which is generally bilious, from the stomach and intestines.*

The redundancy of bile in the stomach and intestines so frequently accompanying erysipelas, gave rise to the hypothesis of erysipelas being occasioned by a bilious state of the fluids, a doctrine† long maintained,

* Schroeder has been at the pains to collect a number of authorities to prove that this complaint frequently arises from the presence of irritating matter in the alimentary canal; the fact indeed is generally admitted to be unquestionable. In confirmation of this opinion we are referred to the works of Hippocrates, Galen, Ballonius, Hoffman, Lieutaud, Tissot, Baglivius, Bianchus, Friend, Richa, Mead, Brocklesby, Zimmerman, Molinarius, and others of less note, to which Quarin, Vogel, Burserius, Desault, and other late writers may be added. Desault in his Surgical Journal relates several striking cases of erysipelas arising from, or supported by, derangement of the primæ viæ.

† See this doctrine considered at length in Bureau's Treatise on Erysipelas.

and adopted by so late an author as Quarin. But other noxious matter in the primæ viæ also produces erysipelas, and other eruptions, we have seen, not suspected to depend on a bilious state of the fluids, arise from the same cause.

It is perhaps by affecting the state of the primæ viæ, that the passions of the mind, particularly rage, terror, and vexation, frequently excite erysipelas, and that pregnant women are observed to be particularly liable to it.

But even in these causes we find erysipelas resembling other phlegmasiæ, which, it will appear in considering these complaints, more frequently arise from derangement of the primæ viæ than is generally supposed.

Erysipelas seems also now and then to arise from other affections of the abdominal viscera, particularly affections of the liver.* In this respect also we shall find that the

* The erysipelas infantum in particular has been observed to arise from this cause.

erysipelas

erysipelas resembles some of the phlegmasiæ.*

Erysipelas in general is not contagious, yet like other symptomatic eruptions, as well as certain phlegmasiæ, it sometimes attends the prevailing epidemic, and then the fever is generally the typhus gravior. It has already been observed that such epidemics seldom occur in Britain. Dr. Bromfield, in his Surgical Cases and Observations, mentions an erysipelas of the head, which was epidemic for two years, in which it was necessary to

* It will appear from a variety of observations, that inflammations of the viscera, of the thorax in particular, are apt to arise from various affections of the abdominal viscera. See an Account of the Pleuritis Verminosa, in the 43d, 44th, and 45th sections of the 21st Epistle of Morgagni. See also an Account of Dissections by Wendt in his Treatise de Pleuritide in Sandifort's Thesaurus; an Account of the Pleuritis Biliosa in Bianchus's Historia Hepatica, and in the fifth volume of the Edinburgh Medical Essays; and several papers, in the second volume of Haller's Disputationes ad Morb. Hist. et Cur. pertinent, on the Pneumonia Putrida which seems often influenced, if not caused, by affections of the primæ viæ.

employ cordials and Peruvian bark, antiphlogistic measures generally proving fatal. Instances of epidemic erysipelas are also to be found in the works of Sydenham, Burserius, Tissot, and others.

It is remarkable that erysipelas sometimes returns periodically, attacking the patient once or twice in the year, or even once every month, and then by its repeated attacks it often gradually exhausts the strength, especially if the patient be old and of a bad habit. Hoffman mentions several cases of this kind. In one of these, the return of erysipelas was prevented by an issue and low diet; two of the most powerful means, we shall find, of preventing the appearance of the phlegmasiæ. Vogel and Schroeder mention cases of the same kind, and the former observes, that those who are subject to erysipelas are generally free from other complaints. Schroeder mentions several instances, in which the erysipelas constantly supervened at the time the menses should have appeared.

3. Of

3. Of the treatment of the Erysipelatous Fever.

From what has been said of the symptoms and causes of erysipelas it appears, that in those cases where the affection of the skin has been present from the beginning of the complaint, or where the complaint has been attended from the first with coma or delirium, it is to be regarded as a phlegmasia, and universal experience has ascertained, that the treatment in these cases is the same as in other phlegmasiæ. The treatment in such cases therefore will be considered when we come to speak of the phlegmasiæ.

To the same place it is proper to refer the local treatment in erysipelas.

We are at present to consider, how far the appearance of the erysipelatous eruption in the progress of synochus, influences the treatment of this fever.

The appearance of the erysipelatous eruption in the first stage of synochus, that is, while the inflammatory symptoms prevail, the period at which it most frequently supervenes,

pervenes, occasions but little change in the mode of treatment, except that as the inflammatory affection of the skin increases the symptoms of synocha, the means of moderating excitement must be employed with greater assiduity. They are also safer than in other species of synochus.

It has been observed, that if the typhus has commenced before the appearance of this eruption, the symptoms of synocha are often recalled by it. They are not only recalled, but maintained, for the typhus which supervenes towards the end of an erysipelatous fever is less considerable, in proportion to the preceding symptoms, than in other varieties of synochus; the erysipelatous fever in this respect also approaching to the nature of a phlegmasia, hence the effects of evacuations are less to be dreaded than in cases of synochus where no erysipelatous eruption supervenes. Sydenham did not scruple to employ blood-letting in erysipelas almost as freely as in any of the phlemasiæ;* how we are to proportion the evacuations

* "Hæc ut fiant, ubi primus accedo, satis largam "sanguinis

evacuations to the state of the local affection will appear more fully in treating of the phlegmasiæ.

All that need be said at present is, that the more severe the local affection, that is, the greater the swelling, heat, pain, and the further the inflammation extends, especially if its seat be the head or trunk, and the greater the coma or delirium, the more powerful must the antiphlogistic measures be; provided the pulse continues full and strong, still more if it be hard, which is generally the case when the local affection is considerable. "Upon this conclusion," Dr. Cullen observes, "the erysipelas of the "face is to be cured very much in the same "manner as phlegmonic inflammations, by

"sanguinis quantitatem e brachio extrahi præcipio, "qui quidem pleuriticorum sanguinem fere semper "æmulatur;" and after mentioning the other means he employed after blood-letting, he observes, "Hac me-"thodo tum febris, tum alia symptomata citissime "fugantur. Sin aliter, rursus venam seco, quod et "tertium nonnunquam fieri debet interposito semper "die uno, si prava nempe adsit sanguinis diathesis et "febris intensior." Sydenham de Feb. Erysipel.

" blood-letting, cooling purgatives, and by " employing every part of the antiphlogistic " regimen, and our experience has con- " firmed the fitness of this method of treat- " ment. The evacuations of blood-letting " and purging are to be employed more or " less according to the urgency of the " symptoms, particularly those of the py- " rexia, and those which mark an affection " of the brain. As the pyrexia continues " and often increases with the inflammation " of the face, so the evacuations mentioned " may be employed at any time in the " course of the disease."

When erysipelas appears as a simple phlegmasia however, more copious evacuations are proper than in the case before us, where a phlegmasia supervenes on continued fever, particularly if the fever has arisen from contagion or shewn a tendency to typhus.

There is another caution which deserves attention in the employment of evacuations in the synochus erysipelatosus. This, like other affections of the skin, which appear in continued fever, has been known suddenly to recede, an alarming train of symptoms,

toms, of which debility is the characteristic feature, supervening. This is comparatively a rare occurrence; as in other eruptive fevers, it is most apt to happen where debilitating causes have been applied. It is also to be remembered, that when retrocession takes place, the patient is seldom out of danger till the eruption is recalled, which is done with the greater difficulty the more he is debilitated.

The advantages of blood-letting over other evacuations for moderating the excitement have been pointed out; but the erysipelatous eruption frequently indicating derangement of the primæ viæ, and being often increased if not caused by such derangement, a small evacuation by the bowels in the erysipelatous fever often produces more powerful effects than a larger evacuation by venesection. We shall find, in considering the phlegmasiæ, that in all inflammatory affections of the head, purging is particularly useful; in the erysipelas of the face therefore it is doubly indicated, and in all forms of the complaint, when the symptoms are moderate, generally renders the

the employment of blood-letting unnecessary.

Schroeder justly observes, that catharsis should always precede blood-letting in the erysipelas. One caution however is to be kept in view, if the local affection proceeds from, or is in any degree caused by, affections of the primæ viæ, the beneficial effects of purging will very quickly be observed, so that if it does not soon produce a favorable change, we should not persevere in the use of this remedy. Frequent purging, says Quarin, especially where the habit is debilitated and the pulse frequent and small, renders the erysipelas more alarming; but even where the pulse is strong and hard, if the first exhibition of cathartics is not attended with beneficial effects, it is better, for the reasons given in speaking of the modus operandi of blood-letting, to reduce the excitement by this remedy than by repeated purging. And with regard to the opinion, that venesection is apt to occasion a retrocession of the eruption and make it seize upon internal parts, the observations made on the same objection to it in other eruptive

eruptive synochi, are applicable here. We need not fear, says Schroeder, that blood-letting will occasion a retrocession of erysipelas or make it fall on internal parts.*

If the erysipelatous eruption appears at an early period of the fever, vomiting should precede catharsis, except in erysipelas of the head, in all cases of which an emetic is at least a doubtful remedy.

While we endeavour to evacuate the morbid contents of the alimentary canal, we should at the same time correct what part of these contents may still remain, by the use of acids or absorbents, according as bile or an acid prevails.

Erysipelatous fevers often terminate by

* When the eruption recedes, blisters and cordials, with diaphoretics, have been found the best means of restoring it. See the observations of a variety of authors, particularly those of Hoffman and Schroeder. "If the swelling," says M'Bride, "should suddenly "sink and the acrid humor appear to strike in, op- "pression or anxiety come on, and the pulse grow "weak, then we must blister, give wine with free- "dom, and the confectio cardiaca or volatile alkaline "salt and spirit, according to the exigency of the "case."

sweat;

sweat; mild diaphoretics with dilution therefore form an useful addition to the treatment; and when a diaphoresis of the inflamed part appears, it has been found useful to support it by gentle warmth.

The semicupium and sinapisms, applied to the feet, have been particularly recommended in cases of erysipelas of the face attended with coma; but these, and other parts of the treatment, will be considered under the heads phlogosis and phrenitis.

It has been observed, that the erysipelatous eruption sometimes shews itself after the typhus is completely formed, or even far advanced. The combination is then of a very different nature from that we have been considering; the inflammation being incapable of changing the nature of the fever, partakes of it. Instead of the full florid appearance it assumes in synocha, the parts affected become flaccid and livid.

It seldom appears in typhus in this country, unless as the consequence of injury applied to the part, from the patient being allowed to lie too long in the same posture, &c. "We have hitherto," Dr. Cullen observes, "considered erysipelas as in a great measure

"measure of a phlegmonic nature, and "agreeably to that opinion we have pro- "posed our method of cure. But it is pro- "bable that an erysipelas is sometimes "attended with, or is a symptom of, a pu- "trid fever; and in such cases the evacu- "ations proposed above may be improper, "and the use of the Peruvian bark may be "necessary. But I cannot be explicit upon "this subject, as such putrid cases have "not come under my own observation." In other countries however, erysipelas often shews itself in malignant fevers, independently of any injury of the part, spreading rapidly and quickly running to gangrene.*

As the appearance of the erysipelatous eruption in synocha renders the antiphlogistic mode of treatment more indispensible; so, on the other hand, its appearance in the typhus gravior, makes it necessary to push the invigorating plan to the utmost. Bark and wine are still the remedies chiefly to be depended on, and, in such cases, must be given in very large doses.

* See an Account of the Malignant Erysipelas in the works of foreign writers, Burserius, Quarin, &c.

Virginian snakeroot, camphire, scordium, and vitriolic acid, are recommended by foreign writers. The vitriolic acid and alum are particularly indicated when the malignant erysipelas, as often happens, is accompanied with a tendency to the worst kinds of hemorrhagy. In other cases perhaps their refrigerant property more than counterbalances any advantage to be expected from them.

Although when the fever becomes malignant, the bark and wine are the remedies on which we chiefly rely, we must be cautious not to exhibit them too early in erysipelatous fever, while there is still present any degree of synocha, by which Dr. Smith observes he has often seen gangrene induced instead of prevented. The typhus must be formed, and the florid appearance of the inflammation beginning to be changed to a purple, before the bark can be safely exhibited in large doses.

With regard to the treatment of the erysipelas infantum, which is evidently a phlegmasia, it will be considered under phlogosis.

BOOK III.

OF THE EXANTHEMATA.

THE class of idiopathic fevers was divided into three orders,* intermitting and remitting fevers, continued fevers, and the exanthemata. The two first of these orders have been considered; we are now to consider the Exanthemata.

It appears from what was said in the Introduction, that the fever in this order of diseases is as truly idiopathic as in either of the foregoing. The exanthemata indeed are constantly attended by a local affection, an eruption on the skin, but this appears a considerable time after the commencement of the fever, and cannot therefore be regarded as its cause; besides, the degree of fever is not at all proportioned to that of the local affection, in some of the exanthe-

* See the Introduction.

mata

mata so much the contrary, that the more severe the local affection, the milder is the fever. This is often the case in the plague, and almost always in the scarlet fever; nay where certain causes conspire to prevent the fever, the local affection of the exanthemata is often present and that to a considerable degree without fever; this frequently happens in the plague and small-pox. We shall find also that in the exanthemata, the fever with all its peculiar symptoms has often appeared without any eruption; this is true of the plague, small-pox, and measles, and probably of the other exanthemata. So far indeed is the local affection in these complaints from occasioning the fever, that the latter generally suffers an abatement, and is sometimes wholly removed, on the appearance of the eruption.

In the exanthemata then, the fever is as truly an idiopathic affection as in fevers properly so called, and in laying down the practice in the exanthemata we shall find it treated as such.

Among the orders of idiopathic fevers we readily perceive a striking analogy. Between

Between remitting and continued fevers it is impossible to draw the line of distinction, and the exanthemata we shall find bear a strong resemblance to the eruptive fevers we have been considering. The whole forms evidently a natural class of diseases, of which the arrangement that has been followed points out the different gradations.

The exanthemata were defined in the Introduction, contagious diseases beginning with an idiopathic fever, at a certain period of which, pustules, often in considerable number, appear on the skin.

This order comprehends six species: Small-pox, Chicken-pox, Measles, Scarlet Fever, Plague, and Nettle-rash.

CHAP. I.

*Of the Small-Pox.**

THE Small-Pox is defined by Dr. Cullen, "Synocha contagiosa, cum vomitu et ex

* The small-pox is termed by medical writers, Variola or Febris Variolides.

" epigastrio presso, dolore. Tertio die in-
" cipit, et quinto finitur, eruptio papularum
" phlegmonodearum; quæ spatio octo die-
" rum, in suppurationem, et in crustas
" demum abeunt, sæpe cicatrices depressas
" sive foveolas in cute relinquentes."

Such are the distinguishing marks of the disease as it most commonly appears, but we constantly meet with cases to which this definition will not apply. We shall find that the eruption does not uniformly appear on the third day, nor does it always cease on the fifth, and in many cases the matter of the pustules remain so crude, that they can hardly be said to have undergone suppuration. Even the pain of the stomach increased on pressure, and vomiting are not constantly present in the eruptive fever. Nay, in certain cases, there has been no eruptive fever at all, the pustules appearing without any previous complaint. But the definition just quoted, marking the common course of the disease, is perhaps the best that can be given.

The small-pox has been long divided into

into distinct and confluent. The former is defined by Dr. Cullen,

"Variola, pustulis paucis, discretis, cir-
"cumscriptione circularibus, turgidis, febre,
"eruptione facta, protinus cessante."

The distinct small-pox occasionally varies from that described in the foregoing definitions.

Sometimes the matter of the pustules, instead of being purulent, appears of a colourless fluid. This variety is termed Variola Discreta Crystallina.

It sometimes happens in all forms of the small-pox, but more rarely in the distinct, that small vesicles appear in the interstices of the pustules. This variety has been termed Variola Discreta Vesicularis.

Sometimes small empty vesicles appear among the pustules, or the matter of the pustules themselves disappear leaving them empty. When this happens the disease is termed Variola Discreta Siliquosa.

The pustules have sometimes been observed solid throughout; these solid pustules either appearing alone, or being interspersed with others of a more common

appearance. This is a rare form of the disease. It has been termed the Warty Small-pox, or Variola Verrucosa.*

When the pustules are of the common appearance but very numerous, yet upon the whole distinct and unattended by any of the symptoms just mentioned, the disease has been called Variola Adjuncta; and this may be regarded as the connecting link between the distinct and confluent small-pox.

All these varieties are attended with more danger than the simple distinct kind, where the pustules suppurate favorably, and are few in number. The empty vesicles indeed sometimes appear in very mild cases.

Many more varieties of distinct small-pox are enumerated by authors. Sauvages,† for instance, enumerates twelve species, but many of them are marked by symptoms which cannot be regarded as sufficient to characterize different species of the disease.

* See Cleghorn's Diseases of Minorca, Burserius's Institut. Med. Pract. Mead De Variolis, Friend's Epistola de quibusdam Variolarum Generibus, &c.

† See the Nosologia Methodica of Sauvages.

Dr.

Dr. Cullen defines the confluent small-pox,

"Variola, pustulis numerosis, confluen-
"tibus, circumscriptione irregularibus, flac-
"cidis, parum elevatis, febre post erup-
"tionem perstante."

Although, as expressed in this definition, the number of pustules in the confluent, is generally much greater than in the distinct, small-pox, yet it sometimes happens that, though numerous, the pustules remain distinct; and, on the other hand, but more rarely, that, though few, they appear in clusters and run together.

The nature of the disease is best known, and consequently the names should be determined, from observing the state of the face. The danger is better ascertained by the number and appearance of the pustules there, than on any other part of the body. If they be distinct and few in number on the face, even although they are in some degree confluent elsewhere, the disease is termed the distinct small-pox, and the danger is inconsiderable. If, on the other hand, there be a load of pustules on the

face, if they run into each other so that the face appears uniformly of a whitish colour, as if, to use Sydenham's expression, it were covered with parchment, whatever appearance the eruption may have on other parts of the body, the complaint is termed confluent, and the danger is considerable.

Dr. Sims, in his Account of Epidemical Diseases, even observes, that the danger was not to be estimated so much from the number of small-pox on the whole face, as from that on the upper part of the forehead, about the junction of the hairy-scalp with the smooth skin. If any were distinct there, and filled properly, little was to be apprehended.

It is evident, from what has been said, that we can draw no line of distinction between the distinct and confluent small-pox. They insensibly run into each other. In the worst kinds of the confluent, there are generally some distinct pustules. In cases which deserve the name of distinct, we often observe two or more pustules running together. Concerning this division therefore it is proper to observe, that where the greater

greater number of pustules are evidently confluent, the complaint has received the one appellation; when the greater number are distinct, the other.

The appearance of the pustules also, as appears from the foregoing definitions, as well as their number and degree of confluence, forms a striking mark of distinction between the benign and confluent small-pox.

The confluent small-pox varies in the same manner as the distinct; hence the names variola confluens crystallina, vesicularis, siliquosa, verrucosa, &c. all which varieties are attended with great danger. Most of the symptoms expressed by these terms are more apt to attend the confluent, than the distinct small-pox.

In the confluent the pustles sometimes appear almost black from a degree of mortification taking place, and blood being mixed with the matter they contain; hence one variety is termed Variola Confluens Nigra.

When blood is effused into the cavities of the pustules without giving them a perfectly

black appearance, the complaint has been termed Variola Sanguinea.

When the pustules are here and there collected together in clusters, with few in the intermediate spaces, the complaint has been termed Variola Confluens Corymbosa.

When petechiæ appear between the pustules, it is called Variola Confluens Petechialis, or Maligna.

After laying before the reader the symptoms of the distinct and confluent small-pox, it will be necessary to take notice of some of the principal varieties of this complaint which may properly enough be termed anomalous.

In detailing the symptoms of small-pox, it is unnecessary to consider separately what has been termed the simple distinct, and contiguous distinct, the simple confluent, and putrid confluent, as some have done. The two former I shall comprehend under the term distinct, and the two latter under that of confluent. The contiguous are only the worse kind of the distinct; and the putrid the worst form of the confluent.

It will be necessary to point out the symptoms

symptoms which indicate most danger. Those indicating most danger in the distinct small-pox, belong to that called contiguous distinct; those indicating most danger in the confluent, to that called putrid. These divisions are of no use; it is only necessary to take notice of them, because they have been adopted by authors.

SECT. I.

Of the Symptoms of the Small-pox.

IN order to avoid confusion, it will be proper to consider the symptoms of the distinct and confluent small-pox separately.

1. Of the Symptoms of the Distinct Small-pox.

Small-pox attacks in a manner similar to the fevers we have been considering.

The patient sometimes complains of sickness for several days before the fever is distinctly formed; this however is not very often observed. The fever generally comes on about mid-day, with the symptoms of a

a cold stage, often attended with a considerable degree of drowsiness.

If the patient is old enough to give an account of his feelings, he complains of languor and listlessness, with the other uneasy sensations that attend the commencement of synochus. These symptoms are soon followed by considerable heat, thirst, and the other symptoms which characterize those fevers in which the synocha prevails.

The skin and fauces are parched, the body costive, the urine at first pale, afterwards more scanty and high coloured, and hemorrhagies are frequent, particularly from the nose. When the small-pox is of the distinct kind, the fever which precedes the eruption, and on that account termed the eruptive fever, is always a synocha, and the more moderate the symptoms of excitement are, the more favourable is the prognosis.

Such are the symptoms which the eruptive fever of small-pox has in common with many other febrile diseases, but certain symptoms generally attend, by which the disease

disease may be known before the eruption makes its appearance.

It has been observed, that pains of the back, limbs, and loins, are more common and severe than in most other febrile complaints. The patient also sometimes complains of pains in the breast and fauces, and coma is apt to supervene.* All these symptoms afford an unfavourable prognosis.

In adults particularly, when the eruption is about to be numerous, there is often uncommon tendency to sweat, which recurs as often as the patient goes to bed.† A coldness of the extremities is often present during almost the whole course of the disease, especially in children, even where the danger is not considerable, and has been regarded as one of the best diagnostic symptoms of the eruptive fever.‡ But the

* Bang observes, that coma is most apt to supervene in this complaint in the vigour of life. See Acta Societ. Med. Hafn.

† Sydenham says, he never observed this symptom in children either before or after the appearance of the pustules.

‡ See Dr. Walker's Treatise on the Small-Pox.

most

most unequivocal are those mentioned by Dr. Cullen in the foregoing definition, the vomiting and pain of the stomach increased on pressure. Even these however, like the other diagnostic symptoms of this fever, are not universally present.*

The vomiting is generally bilious,† and then there is often present at the same time a degree of bilious diarrhœa.

A little before the appearance of the eruption, some change in the state of the symptoms generally takes place. Children are subject to starting during sleep from the commencement of the complaint. On the night before the eruption they are often seized with an epileptic fit. If it only occur once or twice, it is hardly to be regarded as unfavorable, and has even been believed to afford a favorable prognosis.‡ If the child has

* See the observations of Van Swieten in his Commentaries, and others, on the diagnosis of this fever.

† It is difficult to say on what foundation Dr. Thompson has asserted that the vomiting is most frequently bilious in women and children. See Dr. Thompson's Treatise on the Small-pox.

‡ Epileptic fits have sometimes though rarely occurred

has already teethed, this symptom may always be regarded as the forerunner of the pustules.

Instead of the fit, children sometimes have a grinding of the teeth, and convulsive twitching about the mouth often spreading to other parts of the face, and these symptoms in many cases precede the fit.

At the same period the fever often suffers an exacerbation, the lips are frequently edged round with inflammation, the eyes are glaring and cannot endure the light, the face glows, there is a considerable increase of temperature, the skin and fauces become parched, and coma, although it had not shewed itself at an earlier period, often supervenes. The patient is sometimes troubled with cramps in the legs, and a severe pain in the back now and then comes on a short time before the appearance of

curred at a late period of the distinct small-pox. The son of Lord Sunderland, inoculated by Mr. Maitland soon after the introduction of inoculation into England, died of an epileptic fit after the greater part of the pustules were dried off. See Woodville's History of Inoculation.

the

the pustules. Few of these symptoms however are observable in mild cases; the coma and cramps of the legs generally forebode a copious eruption.

The period at which the eruption appears is not exactly the same in all cases; generally towards the end of the third day, or the beginning of the fourth, counting from the commencement of the febrile symptoms. Sydenham observes, that in the distinct small-pox the eruption generally happens on the fourth day, including the day on which the fever commences, sometimes rather later, but rarely before this period. Dr. Cullen makes the time of its appearance about the end of the third day. If we class together all kinds of small-pox, we shall perhaps find the third day the mean time of its appearance.* It is to be observed

* Nothing can be more vague than the manner of ascertaining the period of the eruption. The eruption is said to happen on the second, third, fourth, &c. day, whether it occurs in the morning or evening of these days, and whether the accession of the fever has been in the morning or evening. Great accuracy in

observed that the later the eruption the more favorable is the prognosis.

The pustules on their coming out are small red points, appearing first on the face and hairy scalp, then on the neck, gradually spreading over the whole body. It frequently happens, that as soon as the pustules make their appearance the patient is affected with sneezing, which continues to recur while they are coming out. The interruption of this symptom has been regarded as a sign of the eruption being finished.

About the fifth or sixth day, counting from the commencement of the fever, that is, the second or third of the eruption, a

in this respect however would not be of much consequence.

It has been proposed to make every day consist of 24 hours in computing the appearance of the eruption, so that were the fever to attack to-day at one, and the eruption to appear to-morrow at twelve, it should be regarded as appearing on the first day. If it appears between one of the second day and the same hour of the following it should be regarded as appearing on the second day, and so on. See Dr. Thompson's Treatise on Small-pox.

little

little vesicle, which appears depressed in the middle, is seen on the top of each pustule, containing a matter nearly colourless. For two or three days the vesicles increase in breadth, the matter gradually assuming the appearance of pus. About the eighth day of the disease they become spherical, and the pustules are completely formed; being then very itchy, hard, and prominent, and appearing almost terminated in a point.

When the pustules are more numerous, although benign, they neither rise so high nor are so much pointed, as when fewer in number; but are then often rather flat on the top.

In the most benign small-pox, from their first appearance the pustles are surrounded with a perfectly circular inflamed margin. When the pustules are more numerous, though still of a favorable kind, the margin is less exactly circular. These margins coalescing in places where the pustules are crowded, give a red colour to the skin lying between them, which is always a favorable appearance.

In the mildest cases, no more pustules appear

appear after the end of the first day of the eruption, or the second at furthest. In cases where they are about to be numerous, they often continue to make their appearance for a day or two longer.

About the eighth day, when the pustules are pretty numerous, the face swells and is often affected with lancinating pains. The swelling sometimes extends to the whole head, the eye-lids seem as if distended with a fluid, and are often so much enlarged as entirely to close the eyes.

When the eyes are much affected from the beginning, the sight is sometimes lost, generally in consequence of one or more pustules forming on the cornea. This indeed is a rare occurrence. Pustules are rather more apt to appear on the sclerotica, and there their consequences are less to be dreaded.

When the tumefaction of the face begins to subside, which happens about the tenth or eleventh day, the hands and feet swell, which in the space of some days subside in like manner.

All these are symptoms not very remark-

able in mild cases: at the same time it is not to be overlooked, that when the other symptoms are severe, these swellings, if not in excess, are to be regarded as favorable appearances.

As the disease advances, the matter of the pustules becomes by degree more opaque, thick, whitish, and at length yellow. When the pustules are very numerous, the matter is thinner and not so yellow as in the most benign forms of the disease.

About the eleventh or twelfth day, still counting from the commencement of the fever, the pustules have gained their full size, which differs a little in different epidemics, but is generally about that of a pea. A dark spot now appears on each. From being soft and smooth, they become rough and throw out a yellow matter. The pustules now begin to shrink, and the matter drying forms a small crust over each of them. Sometimes only part of the matter is thrown out, which, together with that remaining, hardens; and, in a few days, falls off, leaving the skin in the places which it covered of a dark brown colour, that

that often remains for a long time after the patient is well.

While this takes place, the swelling of the face and other parts gradually subsides. But the foregoing process does not go on at the same time on every part of the body. The pustules in those places on which they first appear first arrive at maturation. They generally remain longest on the hands. The sooner the pustules become dry and fall off, the better in general is the prognosis.

It often happens in cases where the pustules have been more numerous on the face, continued for a longer time, and been filled with a matter less thick and benign than usual, that after they fall off, the parts which they covered suffer desquamation, so that small pits are formed, for the pustules do not on falling off leave pits; they are formed by a succeeding operation. Pits are seldom the consequence of the distinct small-pox, unless the pustules are very numerous.*

It

* Sydenham remarks, that when pitting follows

It sometimes happens that the matter of the pustules, particularly on the arms and hands, is either absorbed, or, as Dr. Walker alledges, transudes through the cuticle, so that they appear empty vesicles, giving rise to the variety termed siliquosa. Lobb* observes, that he has seen these empty vesicles filled with a well conditioned matter, which is a favourable symptom. It is not uncommon indeed, when the strength is considerably reduced, for the pustules on every part of the body to appear rather flat; the tumor of their base subsides, and the matter seems in part either to have been absorbed, or to have transuded† through the cuticle; and on the exhibition of any remedy which renews the strength, walking for instance in cool air, or in certain circumstances using the cold bath,

the distinct small-pox, it is generally the consequence of several pustules having run together, which usually happens, he observes, in the six last months of the year. He generally found the small-pox milder in the spring than in the autumn.

* See his Practice of Physic.

† See Walker's Treatise on the Small-Pox.

the

the pustules again swell and become turgid with matter.

While these symptoms proceed, others at the same time demand attention.

On the coming out of the pustules, the fever suffers a remission, and in the mildest cases disappears entirely about the fifth day, at which time the eruption is compleated.* About the sixth or seventh day, when the pustules are numerous, some uneasiness of the throat comes on, with an increased secretion of saliva, the voice at the same time often becoming hoarse. A considerable degree of any of those symptoms tends to afford an unfavourable prognosis.

As the disease proceeds, the secretion from the mouth and throat often becomes thick, and is not easily spit out, sometimes occasioning such difficulty of swallowing, that liquids taken into the mouth are spit out again, or rejected by the nose. The

* When the tendency to sweating has occurred, it has been observed, notwithstanding the abatement of the fever, to continue nearly to the time of maturation.

swelling or parched state of the fauces also sometimes considerably affects the breathing, and deafness is now and then a symptom at the same period, from a pustulary affection of the meatus auditorius externus. These symptoms however, in the distinct small-pox, are generally of little consequence; they all wear away as the more essential symptoms decline.

When the pustules are numerous, some return of fever generally happens about the eleventh day, a period we shall find much dreaded in some forms of the disease; but for the most part it disappears in a few days, and in this kind of small-pox is seldom attended with much uneasiness, and less frequently with danger.

But even in the distinct small-pox, when the pustules are numerous, a train of symptoms indicating more danger now and then supervenes at an earlier period, about the seventh or eighth day. This train of symptoms has been called the secondary fever.

It sometimes happens at this period, after the patient has appeared almost well, the pulse

pulse having returned to its natural frequency, that symptoms of fever more or less gradually, in some cases very suddenly, return, and in the space of a few hours the pulse becomes more frequent, and the other symptoms of fever more severe, than at any former period. But when this fever occurs in the distinct small-pox, it is attended with less danger than in the confluent. In the former it seldom appears when the pustules are of a benign kind, and almost never when the patient has received the disease by inoculation and been properly treated.

When the pustules are numerous they must, in many places, run together. When the greater number run together, the disease is termed the Confluent Small-pox. The symptoms peculiar to this form of the disease we are now to consider.

2. Of the Symptoms of the Confluent Small-pox.

Although there is much similarity in the eruptive fever of the distinct and confluent small-pox, yet, even from the commence-

ment, in some respects they differ essentially. The symptoms common to both, the sensation of cold, the anxiety, sickness, vomiting, &c. more uniformly attend and are experienced to a greater degree in the confluent than in the distinct form of the disease.

The pains of the back and limbs in particular, which are only sometimes troublesome in the distinct small-pox, very generally precede the confluent eruption. Van Swieten observes, that when the complaint comes on with a severe lumbago, so that the patient can hardly move his limbs, he always suspects danger. Even although the fever be slight, he adds, these symptoms always afford an unfavourable prognosis; and Morton remarks, that he always found coma and a severe pain of the loins to be dangerous symptoms in the eruptive fever of small-pox. There are few authors indeed who treat particularly of the small-pox without making similar observations.

The most striking difference however between the eruptive fever of the distinct nd confluent forms of the disease, is, that in

in the distinct it is synocha, never shewing a tendency to typhus, while in the confluent, although at the beginning synocha, it is apt to be changed into typhus by any error in the treatment, or even without any evident cause. In the most alarming cases indeed the fever is a typhus almost from the beginning; petechiæ, and sometimes hemorrhagies of a bad kind, appearing at a very early period.

Epileptic fits now and then occur during the first days of the fever, and have even proved fatal before the eruption appeared; at other times they continued to recur after the eruption is out, and sometimes through the whole course of the disease.

The tendency to sweat is not common in this kind of small-pox; but a diarrhœa often precedes the eruption, and continues for a day or two after its appearance, which Sydenham declares he never saw happen in the distinct small-pox. If the stools are unusually fetid, the prognosis is very bad.

This diarrhœa is generally confined to children; in adults an affection of the fauces,

fauces, often amounting to a salivation, attends, instead of the diarrhœa.* It was observed, that at a later period, even of the distinct small-pox, there is sometimes an increased secretion of thin saliva.

The eruption in the confluent, generally appears earlier than in the distinct, small-pox, seldom later than about the beginning of the third day, and often on the second; in some cases even before the expiration of the first twenty-four hours; and fresh pustules continue to come out for the space of three or four days. The period of the eruption is more uncertain than in the distinct small-pox; for although generally earlier than in mild forms of the disease, it has been delayed by the appearance of inflammatory symptoms to the fourth or even to the fifth day. An acute pain of the loins resembling a fit of the gravel, in the side like that attending pleurisy, in the

* The salivation sometimes, though rarely, appears in children. Tissot says, he has seen several, scarcely four years of age, seized with the salivation, while the bowels remained costive. See Tissot's Treatise on the Small-pox, Apoplexy, and Dropsy.

limbs

limbs resembling rheumatism, or in the stomach accompanied with sickness and vomiting, are enumerated by Sydenham as symptoms which he has known to have the effect of delaying the eruption in confluent small-pox.

On the second day of the fever an erythematic inflammation often appears on the face, and soon spreads over the neck and breast, and in some cases over the whole body. This is the forerunner of pustules, which begin to emerge from it in the form of small red points, many of which soon coalesce. They sometimes appear in clusters, the intermediate spaces being free from them; at other times many parts, and particularly the face, seem almost covered with them.

The eruption in the confluent small-pox on its first appearance is sometimes so like that of the measles, that they can only be distinguished by the accompanying symptoms.

The pustules form matter sooner in the confluent than in the distinct small-pox; they are not much raised above the surrounding

rounding parts, nor do they retain the circular form, but even in places where they are not confluent they become of an irregular shape; nor are they surrounded with an inflamed margin as in the distinct, small-pox, the spaces between the pustules are pale and flaccid, and the pustules themselves, about the time of maturation, often appear like thin pellicles fixed upon the skin.* On the face, where they are generally most numerous and confluent, they often so run into each other, that almost the whole seems one large vesicle, the surface being perfectly smooth.

The matter becomes whitish, brown, or almost black, but never thick and yellow like that of the distinct small-pox. The lighter coloured the matter, the better is the prognosis. When the pustules are of a black colour, the danger is very great. The same may be said of those cases where extravasated blood is mixed with the mat-

* This flat appearance of the pustules in the confluent small-pox has been termed Sessile. By some writers the confluent small-pox is termed Variola Sessilis.

ter,

ter, giving it the appearance of a bloody sanies.

The matter of the confluent small-pox has sometimes been so virulent as not only to destroy many of the soft, but even the bony, parts of the face. The nose, cheek-bones, palate, fauces, velum pendulum palati, and uvula, have been wholly destroyed by it, and the jaw-bones so much affected that the teeth have fallen from their sockets*

The swelling of the face, which only now and then occurs in the distinct small-pox, is a constant symptom of the confluent; and in this form of the disease it both appears earlier and rises to a greater height.

About the ninth day of the eruption, that is, about the eleventh of the disease, the pustules begin to pour out their matter, which hardens on the surface, forming crusts of a brown or black colour, that do not fall off for many days; and are almost

* See Burserius's Institut. Med. Pract. and other works on this disease.

always

always on the face followed by a desquamation which leaves pits. The more numerous and confluent the pustules are, and the darker their colour, the longer they are in disappearing; and the desquamation is sometimes protracted beyond the twentieth day.

It often happens, that although the pustules are crowded on the face, they are few, and even distinct, on every other part of the body. But while the face is loaded with those of the confluent kind, the pustules on other parts never have a benign appearance; they are never circular, raised, nor filled with a well conditioned matter, but in this respect resemble those on the face. In all cases of the confluent small-pox however, the pustules on the trunk and extremities are generally rather larger, and more prominent, than those on the face.

Although the fever in the confluent small-pox often becomes more moderate on the appearance of the eruption, yet it never wholly ceases. This remission generally continues till about the sixth or seventh day,

day, that is, from soon after the period of eruption till near that of maturation, when it suffers a remarkable exacerbation, the commencement of the secondary fever, which often appears with more alarming symptoms than any that preceded it. If coma does not supervene, the patient is distressed with head-ach and obstinate watchfulness, often the forerunners of delirium. The inflammatory affection of the fauces, with hoarseness and dyspnœa, increases, and in many cases all the worst symptoms of typhus supervene, and the patient is carried off on the eleventh day from the commencement of the disease including that on which it made its attack. The eleventh day the reader will find frequently mentioned by Sydenham, and other writers, as the most fatal in the small-pox.

Such are the appearances of the regular distinct and confluent small-pox. It will be proper to recapitulate the circumstances in which they differ, and point out the manner in which they insensibly run into each other, that the means of collecting the

the prognosis may be placed in a clearer point of view.

3. Parallel of the Symptoms of the Distinct and Confluent Small-pox.

The eruptive fever in most cases at its commencement differs only in degree. It is generally accompanied with those symptoms which characterize synocha, but in the confluent they are more severe than in the distinct, and the pain and confusion of the head more frequently rise to delirium.

In the distinct small-pox we often observe in adults a tendency to sweating. In proportion as the succeeding eruption is about to be numerous, this tendency begins to disappear, and that to purging, particularly in children, to shew itself. When the eruption is about to be confluent, the purging is generally considerable, and in the worst cases, the stools are unusually fetid and sometimes mixed with blood; hence it is, that Sydenham justly considers a tendency to sweating a favorable, and to purging an unfavorable, symptom.

In the most benign small-pox there is little

little affection of the fauces, and no salivation. When the eruption is numerous, yet distinct, the affection of the fauces is evident, and often attended with a spitting of thin saliva. In the confluent small-pox the salivation, particularly in adults, comes on early, and is generally considerable.

In the mildest form of the disease, the eruption seldom appears before the fourth day. If the pustules are about to be numerous, it generally shews itself about the end of the third, if about to be confluent, often on the second, and in the worst cases, even on the first day. The eruption in the confluent however is sometimes, though rarely, delayed to the fourth or even to the fifth day; so that the period of eruption here is less certain than in the distinct small-pox.

In the mildest cases, the first appearance of the eruption is that of small red points. In cases where the pustules are about to be numerous, and still more if they are about to be confluent, they are often preceded by a rash on the face, neck, and breast, sometimes spreading over the whole body.

In the mildest form of small-pox the pustules appear few and distinct; in more severe cases they are more numerous, and often here and there, particularly on the face, in small clusters. In the confluent small-pox they are still more numerous, and more frequently appear in this way.

In the mildest cases the pustules are considerably raised above the surrounding parts, and are terminated by a point; they are quite circular at their base, and surrounded by a florid margin, which is also bounded by a very exact circle. In cases where the pustules are more numerous, they are less raised and the circular appearance is not so exact and uniform. In proportion as the number of pustules increase, their elevation is less, and the circumference of the base and margin become more irregular. When they are confluent, particularly in the worst cases, the pustules are almost flat, and the circular shape and florid margin nearly or altogether lost.

In the most favorable cases, although the matter at first appears colourless, it soon becomes thick, white, opaque, and at length

length yellow. Where the pustules are numerous, it continues colourless longer, becomes however opaque and thick, though not so much so as in the mildest cases, and whitish; but seldom assumes the proper yellow colour. In the confluent small-pox it never becomes thick, but changes to a brownish white colour; and in the worst kinds, it is mixed with blood or becomes almost black.

In the mildest kind of small-pox, pustules cease to come out about two days after the commencement of the eruption. When they are about to be more numerous, they generally continue to make their appearance for a longer time; and in some cases of the confluent, for three or four days.

In the distinct small-pox, matter is seldom observed in the pustules before the fifth day of the complaint. In the confluent, it generally appears earlier. In the former, a dark spot appears on the pustules, they become rough, and pour out part of their matter, very uniformly about the eleventh day. In the confluent, although this frequently happens about the same period,

yet the pustules sometimes continue fresh as it is termed for a much longer time. Dr. Cleghorn * observes, that it was often the fourteenth or fifteenth day before the confluent small-pox in Minorca became rough on the face; and on the legs and arms it frequently continued fresh till near the thirtieth day. So that the period of exsiccation, like that of eruption, is less certain in the confluent, than in the distinct, small-pox.

In mild cases the pustules fall off about the twelfth or fourteenth day, and are not followed by pitting; when they are more numerous, they adhere longer, and pitting generally follows. When they are confluent, they are still longer in falling, and pitting almost uniformly succeeds them.

In the most favourable forms of small-pox, the fever almost entirely leaves the patient soon after the pustules make their appearance. Where the pustules are more numerous, a considerable remission takes place, but seldom complete apyrexia. In

* See his Treatise on the Diseases of Minorca.

the

the confluent the remission is less considerable, and in the worst cases hardly to be perceived.

In the mildest small-pox the patient experiences no return of fever about the seventh or eighth day. Where the pustules are more numerous, he is attacked, about the latter of those days, with the secondary fever; when they are confluent, this fever generally makes its appearance a day or two sooner, and all its symptoms are more alarming.

In the mildest small-pox there is little or no degree of fever on the eleventh day. When the pustules are numerous, there is generally on this day a considerable exacerbation of the febrile symptoms; where they are confluent, such an exacerbation takes place on this day, that it frequently terminates life.

In the more favourable cases, the secondary fever is a well-marked synocha, slowly assuming the form of typhus. In the confluent small-pox, the fever is sooner changed to typhus; and in the worst kinds

of the confluent, the secondary fever is a typhus almost from the beginning.

The most benign small-pox is accompanied with little or no swelling of the face. When the pustules are numerous, but distinct, this happens on or about the eighth day; when they are confluent, the swelling of the face comes on sooner and rises to a greater height; the same may be said of the swelling of the hands and feet.

Upon the whole, the more any kind of small-pox differs from the simple benign form of the disease, the periods are less certain, the various symptoms generally appear earlier, rise to a greater height, are protracted for a longer time, and attended with greater danger.

From what has been said it appears, that we may often, before the appearance of the eruption, determine of what kind it will be, since many of the symptoms, characterising the distinct and confluent small-pox, precede the eruption. The following, as appears from the foregoing parallel of the symptoms of distinct and confluent small-pox, are the principal circumstances which

which enable us to predict of what nature the eruption will be.

When the symptoms of the eruptive fever are moderate and readily relieved on exposure to cold, the eruption will almost always be distinct. When the excitement is more considerable and less readily relieved; when the patient is harrassed with pains of the back, limbs, and loins; when there is much coma, or any degree of delirium, especially if the fever in other respects also shew a tendency to typhus, we may expect a confluent eruption. A tendency to sweat in the eruptive fever generally precedes the distinct; a tendency to purging, the confluent. If the affection of the fauces is either not perceived at an early period, or is present only in a slight degree, the eruption will probably be distinct. When this affection is considerable and accompanied by salivation, a confluent eruption may be expected.

The method I have followed in detailing the symptoms of regular small-pox, has occasioned some repetition. This appeared to me admissible, in order to place the prognosis,

sis, in so important a disease, in a clear point of view, which cannot, for reasons mentioned in the Introduction, be done without some repetition.

4. Of the Symptoms of Anomalous Small-pox.

It will be sufficient to point out the circumstances in which some of the most remarkable forms of anomalous, differ from the regular distinct and confluent, small-pox.

One of the most common of the irregular forms of small-pox is that termed crystalline, from the appearance of the pustules.

At first view it may appear wrong to regard the putrid as a regular, and the crystalline as an anomalous, form of the disease. When we recollect however that the putrid small-pox, as it has been termed, only differs in degree from the common confluent, which from improper treatment, or peculiarity of constitution, every day assumes this appearance; and that neither the distinct nor confluent small-pox are apt to degenerate

degenerate into the crystalline; the propriety of this mode of arrangement is sufficiently apparent. Besides, the crystalline small-pox is often epidemic, while other forms of the disease hardly shew themselves.* It is more common however for a few cases of crystalline to appear while the greater number of patients labour under the regular small-pox.

Dr. Rogers divides the crystalline small-pox, in the same way in which the regular has been divided, into distinct, contiguous, and confluent. But here there is not the same room for such a division; for although in some instances the pustules are fewer and more distinct than in others; yet the state of the matter, as well as the appearance of the pustules themselves, does not vary much in different cases; and in all, the danger is considerable.

The crystalline small-pox makes its attack, like other forms of the disease, with the common symptoms of fever.

* See an Account of the Epidemic Small-pox of Cork, in Dr. Rogers's Essay on Epidemic Diseases.

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The vomiting, pain at the pit of the stomach increased on pressure, and coldness of the feet and hands, are still the diagnostic symptoms of the eruptive fever.

It is more apt than the regular small-pox to be attended with those symptoms which indicate danger, coma, delirium, prostration of strength, petechiæ, hemorrhagies, &c.; for although the fever, as in the regular small-pox, is synocha at the commencement; the typhus more frequently shews itself at an early period.

The eruption on its first appearance frequently looks well, and even continues to do so for one or two days. The pustules are of a good colour and distinct, producing a considerable remission of the febrile symptoms. About the third day of the eruption however, there generally appears a numerous crop of pustules; which, although in general distinct, are of an irregular shape, seldom appearing circular as in the distinct form of regular small-pox.

After the eruption is finished, a considerable remission of the fever takes place, but never complete apyrexia; and the urine generally

nerally remains limpid throughout the whole complaint. The distinguishing symptom is the appearance of the matter, which is a colourless fluid that rarely acquires any degree of the purulent appearance.

As in the regular small-pox, there are now and then interspersed among the pustules some which are empty, or clear and dense having no cavity.

Whatever be the appearance of the pustules on their first coming out, they soon become pale. They are never indeed surrounded with the well-defined florid margin of the regular distinct small-pox, and the interstices have the flaccid appearance observed in the confluent.

The period at which the face and head swell is more uncertain than in the regular small-pox, and the swelling in a day or two after its appearance is often suddenly translated to the hands or feet. When this happens it has been observed that no salivation takes place.

If the eruptive fever runs high, it is often followed by a confluent eruption, and then the danger, which is at all times considerable

able in the crystalline small-pox, is very great, few escaping from this form of the disease; in which the fever generally soon becomes a malignant typhus.

In the worst cases, the face and head either do not swell at all, or only in a slight degree, but instead of the swelling, there is generally inflammation about the eye-lids, lips, or some neighbouring part.* The inflammation sometimes seizes on the encephalon, occasioning violent head-ach and delirium. In the latter cases traces of inflammation of the brain and its membranes are generally apparent after death. Even abscesses form in different parts of the head, and matter is sometimes discharged by the ears.† The strong pulse at the temples,

* Soreness of the mouth and throat, instead of the swelling of the face, attended a malignant small-pox, described by Dr. Cleghorn in his account of the Diseases of Minorca. Solid and empty pustules frequently appeared in this epidemic, which was one of the most fatal of which we have any account.

† In the irregular forms of small-pox it is not uncommon for abscesses to form in different parts of the body, and recovery seems often to depend on the pus being

temples, while that at the wrist is feeble, mentioned among the symptoms of synochus as denoting a tendency to phrenitis, is a frequent symptom in the crystalline small-pox, and there affords the same inference.*

The crystalline small-pox sometimes proves suddenly fatal before the eruption appears; more frequently however death is delayed to the seventh day; sometimes to the fourteenth, seventeenth, or even longer.†

A remarkable form of the anomalous small-pox is that which it sometimes assumes when influenced by the measles appearing at the same time, illustrating an observation made when speaking of contagion, namely, that during a contagious

being properly discharged. Abscesses, Rosen observes, are often favourable if the mattter is properly discharged. Haller's Disp. ad Hist. et Cur. Morb. Pert.

* The inference from this symptom is the same in all cases of fever. In nervous complaints, unattended by fever, the pulse is often strong and full at the temples, while it is weak at the wrist, the face at the same time appearing flushed, and the eyes frequently inflamed, without denoting any tendency to inflammation of the encephalon.

† See Dr. Walker's Treatise on the Small-pox.

epidemic

epidemic, almost every disease which appears is sometimes more or less influenced by it.

We have an instance of this form of small-pox in the epidemic described by Sydenham, which raged in London in 1670, 1671, and 1672. It appeared while the measles were prevalent, and continued for sometime after they had ceased, gradually becoming milder and more regular till the year 1674, when the measles again became epidemic, and the small-pox as irregular and fatal as before.

Every case was attended with danger, although the pustules were not always confluent. But even where they were distinct, the complaint was attended with many symptoms which in the regular small-pox belong to the confluent form of the disease. The eruption appeared on the third day, the pustules were never spherical, and became black sometime before their separation. In some cases, although the pustules were distinct, salivation came on, from which, Sydenham observes, we must infer, that notwithstanding the pustules being distinct, the

the disease partook more of the confluent than of the distinct small-pox.

In confluent cases this epidemic differed more essentially from the regular small-pox. On many places, particularly on the thighs, there appeared among the pustules small vesicles filled with a colourless fluid. When the pellicle forming these was broken, the serum ran out, and the parts beneath appeared black and gangrenous.* All died in whom the blisters became gangrenous.

On the eleventh day a white shining pellicle covered the face, which threw out a matter that soon formed a crust, neither yellow like that of the distinct, nor brown like that of the confluent, small-pox; but resembling concreted blood, which during the maturation of the pustules grew darker, till at last the whole face became almost black; from which the disease was termed, the black small-pox.

The eleventh day was less to be dreaded than in the regular forms of the disease; in

* Such cases are to be regarded as a combination of small-pox with the symptomatic eruption which characterizes the vesicular fever.

the

the greater number of cases the patient surviving to the fourteenth and sometimes to the seventeenth day; if he escaped during these periods, his chance of recovery was better. Those in whom the blisters appeared, generally died within a few days after the eruption.

The symptoms upon the whole were more severe than in the regular confluent small-pox, and the eruption on its first coming out had more of the appearance of erysipelas or measles, so that at an early period, it was only known to be small-pox by attending to the diagnostic symptoms of the eruptive fever. The discoloration of the skin also remained longer, and the face was deformed with deeper pits.

It is remarkable and farther illustrates an observation just made, that towards the end of the epidemic, at which time the dysentery raged, the small-pox was apt to assume the form of this complaint. "Operæ "pretium est et illud adjungere, quod, du- "rante hac omni constitutione qua tam epi- "demice seviebant dysenteriæ; variolæ re- "gimine justo calidiore provocatæ, per dy- "senteriam

"senteriam nonnunquam viam sibi face-
"rent; quod ne semel accidisse hactenus
"quidem animadverteram."*

We cannot here help remarking the concurrence of the measles, and the unusual fatality of the small-pox, which has been observed in other instances.

It is an observation even among the vulgar that the small-pox is apt to appear immediately before or after the prevalence of the measles. In such cases however it is not always of a remarkably malignant kind as Sydenham found it.†

Another curious observation has been made relating to the symptoms of these complaints, namely, that if, while a patient labours under the small-pox, he is seized with the measles, the course of the former is interrupted till the eruption of measles is finished.‡ The measles appear, for in-

* Sydenhami Opera, sect. iii. cap. 6. De Variol. Anomal.

† See the 134th and following pages of Sim's Treatise on Epidemic Disorders.

‡ See the first volume of Dr. Duncan's Medical Commentaries, &c.

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stance, on the second day of the eruption of small-pox, the progress of the small-pox ceases till the measles terminate by desquamation, and then goes on in the usual way; and the time from the first appearance of the eruption of small-pox to its termination, is found longer than it ought to be, by the time during which the measles were present. In the third volume of the Medical Commentaries, however, cases are related by Dr. Rainey, in which a concurrence of the small-pox and measles took place without the progress of the former being retarded.* Analogous to the foregoing fact, is one mentioned by Dr. Heberden, in Dr. Kirkpatrick's Analysis of Inoculation, namely, that when the small-pox appeared during an epidemic intermittent, if any

* Cases of this kind I have known. Several are related in the Medical and Physical Journal. Pechlinus, Vogel observes, saw a case in which small-pox appeared on the right side of the body, and at the same time measles on the left, the line of division being a perpendicular drawn through the middle of the body. This case is too extraordinary to gain implicit credit.

labouring

labouring under the fever were seized with the small-pox, the former ceased till the small-pox had run its usual course, and then went on as before.

We meet with similar facts relating to other eruptive diseases. Thus Dr. Jenner, in the Continuation of his Observations relating to the Cow-pox, relates a case in which the scarlatina was interrupted by the appearance of this disease. "But the "most remarkable part of this history is, "that on the fourth day afterwards, as "soon as the efflorescence of the cow-pox "began to die away upon the arm, and "the pustules to dry up, the scarlatina "again appeared, her throat became sore, "and the rash spread all over her. She "went fairly through the disease with its "common symptoms."

To return from this digression; there is still another form of the anomalous small-pox which deserves to be mentioned. It is met with only in children, and seems to be merely the regular confluent small-pox considerably modified by peculiarity of con-

stitution, those only of a debilitated habit of body being subject to it.

The patient is attacked with langour and oppression, that continue for some days without considerably affecting the pulse, which is seldom much more frequent than in health, and the temperature is not above the healthy degree, sometimes below it. As the symptoms advance, the patient loses his appetite, is troubled with nausea and insatiable thirst, becomes drowsy and often comatose. On the third day a few pustules generally come out, but they soon disappear, and the coma increasing terminates life in a few days.

There is still another set of symptoms which deserve the name of anomalous, yet do not constitute a distinct form of the disease. They are apt to occur when the course of the disease is disturbed by improper treatment or any other cause.

When the sweating becomes profuse, the swelling of the face either does not appear, or only in a slight degree, the skin remaining flaccid and the interstices of the pustules pale, although the eruption is distinct; and

had

had not the sweat been profuse, the complaint would have proved mild. In such cases indeed, the pustules themselves generally look well, are red and raised, and even remain so after death.

It now and then happens that the sweat, after flowing freely for some time, suddenly ceases, which is also a very dangerous accident. In many cases neither cordials, external warmth, nor any other means, are capable of recalling it. The patient is seized with sickness, anxiety, extreme restlessness, often delirium, passing the urine frequently and in small quantity, and sometimes expires in the space of a few hours.

It now and then happens in like manner in the confluent small-pox, that the salivation suddenly ceases; and unless this accident is immediately followed by the swelling of the face and hands, the patient generally dies. In the confluent small-pox, Sydenham remarks, both the salivation and swelling are necessary; if either fails, the patient is in danger. Where the salivation does not wholly cease, but the saliva be-

comes so thick that it cannot be spit out, the patient is sometimes threatened with suffocation; and the deglutition is often so impeded that a liquid taken into the mouth is apt to fall into the trachea, and is thrown out by the nose with much coughing. When a thickening of the saliva is attended with coma, the patient generally dies on the eleventh day. This state of the saliva however may be present in some degree without indicating much danger.

A total suppression of urine sometimes comes on about the height of the disease, even in the distinct small-pox, especially if the habit be full and the patient in the vigour of life.

Although a diarrhœa is to be regarded as a favorable symptom in the confluent small-pox, yet it sometimes becomes so profuse as considerably to modify the disease and add to the unfavorable prognosis. Where this or other debilitating causes, such as sudden exposure to cold after the hot regimen has been employed, unseasonable blood-letting, &c. have existed; it sometimes happens that the eruption, or swelling of the face

face and hands, or both, recede; and then the danger is very great.*

It sometimes happens that after the exsiccation of the pustules, a new crop shews itself; and, on the other hand, that the fever with all its peculiar symptoms appears without any eruption at all. It is asserted by Frank, Burserius, and others, that in the latter case the patient is as secure against a second attack of the disease, as if the eruption had made its appearance. There are some observations however which contradict this opinion. In the fourth volume of the Memoirs of the Medical Society of London, Mr. Kite relates two cases in which inoculation produced the usual suppuration in the part inoculated, and at the usual time the patient sickened, but no variolous eruption followed. Both patients were again inoculated fourteen days after the first inoculation. One of them had the disease in the usual way and in a mild form; the other remained unaffected.

* See Sydenham's chapter entitled, Variolæ Regulares, p. 140.

I shall have occasion to mention many of the more remarkable deviations from the ordinary course of the disease, in speaking of the means to be employed when such accidents occur.

The small-pox, especially the confluent and irregular forms of the disease, is apt to leave behind it a variety of troublesome consequences. Most of those who survived the irregular small-pox of Minorca, Dr. Cleghorn informs us, remained blind, consumptive, or lame with caries of the bones, ulcers, &c. Sometimes a gangrenous erysipelas of the limbs, or apoplexy, has supervened and proved fatal. Blindness from a pustulary affection of the cornea is not uncommon, more rarely the hearing is destroyed, and the voice is sometimes lost. The palpebræ, the sides of the nares, and even those of the throat,* have grown together.

All kinds of small-pox leave behind them a predisposition to inflammatory complaints, particularly to rheumatism, ophthalmia, and visceral inflammations. On this part

* See Vogel De Cog. et Curand. Morb.

of

of the subject the reader may consult the 582d and following pages of the fifth vol. of Haller's Disput. ad Hist. et Cur. Morb. Pertinentes, and the third vol. of Frank's Epitome de Curand. Hom. Morb.

SECT. II.

Of the Causes of the Small-pox.

THIS is one of the diseases which have only made their appearance in Europe in modern times. There is no mention in the writings of the Greek or Roman physicians of any disease which can be supposed to have been the small-pox; and we are unable to determine how long this disease has been known in other parts of the world, or where it first made its appearance.

The Arabian writers are the earliest we are acquainted with, who mention it. Both Rhazes and Avicenna treat of the small-pox. Of these, Rhazes is the oldest. The oldest writer on the small-pox mentioned by Rhazes [Ahron] resided at Alexandria when it was besieged by the Saracens

in

in 640 of the Christian æra. There is no distinct mention of the small-pox earlier than this.

The most prevalent opinion is, that it was brought to Alexandria from the East, having been known in many parts of Asia, particularly in China, from much earlier times. Many circumstances however tend to contradict this opinion. There is reason to believe that it raged among the Abyssinians, when they besieged Mecca in the year 569;* from whence it probably travelled into Egypt with the Mahometans, spread with them along the northern parts of Africa, and accompanied them when they passed over into Europe.†

The opinion that the small-pox was first brought into Europe by the crusaders is unfounded, as Dr. Woodville has met with it, under the name Variolæ, in manuscripts of the Harlean and Cottonian Collections in the British Museum, which bear evidence of having been written before the year 900.

* See Dr. Woodville's History of Inoculation.

† See Friend's History of Medicine from the days of Galen to the beginning of the 16th century.

There

There can be little doubt however, that by means of the crusaders the small-pox was more generally disseminated throughout Europe.* It is mentioned by British writers as early as the 13th century, but at what time it was introduced into this island is not known. In America it was unknown till carried thither by the Europeans.

This imperfect history of the small-pox, although there were no other facts on the subject, is sufficient to prove, that it arises from a peculiar contagion, the presence of which, or of the concurrence of causes which first gave it birth, is necessary for the production of the disease.

An opinion has prevailed indeed respecting the small-pox, as well as most other contagious diseases, that besides the presence of the contagion, a certain state of the air, which authors term an epidemic constitution of the atmosphere, is necessary

* In some of the northern parts of Europe, which have little intercourse with the rest, the small-pox was not known, it is said, before the beginning of the present century.

to

to render the complaint prevalent; an hypothesis, once maintained by the best writers, but now so obsolete as hardly to deserve discussion; which I had occasion to consider when speaking of contagion. The only fact which tends to support the opinion is, that the small-pox and other contagious diseases often cease to rage while there is reason to believe clothes, furniture, &c. to be still impregnated with the contagion, and while many still remain capable of receiving the disease. Why this should happen it is impossible to say in the present state of knowledge; if we are however to frame an hypothesis to explain it, it must be one more consistent with other facts than the theory of the epidemic constitution of the atmosphere.

The fatality of the small-pox soon led to the employment of a variety of means with a view to obviate its effects. It is computed that one of six dies who receive the small-pox in the natural way, and that about the eighth part, and in some places many more, of the people of a country where the casual small-pox is prevalent, fall

fall a sacrifice to the disease. "The cele-
"brated M. De La Condamine computes
"that in France one in ten of all who are
"born dies of the small-pox. Dr. Rosen-
"stein, who wrote an excellent Treatise
"on the Diseases of Children, shews, that
"every tenth boy and every ninth girl dies
"of it in Sweden, according to the accu-
"rate reports of the commissioners ap-
"pointed to make the inquiry. In London,
"the births are to the deaths by the small-
"pox, as six and a fourth to one; in Man-
"chester, as six and a half to one; in
"Liverpool, as five and a half to one; in
"Chester, as six and two-thirds to one."*
At certain times the small-pox proves much more fatal. Of thirty-seven ill of the worst kind of small-pox, attended by Baron Dimsdale while in Russia, thirty-five died.

One of the most evident and earliest means adopted to moderate the fatality of small-pox, was removing the sick from all intercourse with the healthy. A convenient

* See the Introduction to Dr. Haygarth's Sketch of a Plan to exterminate the casual Small-pox, &c.

place

place was appointed for the reception of the former, who were not again admitted into society till they had been well for some time.* In the Highlands of Scotland, when a child is seized with a very mild kind of small-pox, those in the neighbourhood expose their children to be infected by it. We now know, that the nature of the small-pox depends less than might a priori be expected on its being received from the mild or confluent forms of the disease, so that little advantage can accrue from the practice.

They practise another method however, which must be attended with better success. Worsted threads wet with the matter are

* The Calmucks, who first received this disease from the Russians, have the practice of carrying those seized with it into the woods and leaving them in huts with some provisions. Those who survive are not permitted to have intercourse with the other inhabitants, till they have been washed, and have remained well for a considerable length of time. The Hottentots, who it is said first received the disease from some Dutch sailors, set guards around the place where it appears, and every person who attempts to escape is immediately shot.

tied

tied round the wrists, by which the disease is frequently induced. Dr. Rush observes indeed, that he could not induce the small-pox by rubbing the matter on the entire skin, from which it is probable, that the practice of the Highlanders only proves successful when the wet worsted threads produce a degree of excoriation. Such is the rudest mode of inoculation, the most effectual of all the means which have been devised for preventing the mortality of the small-pox.

The prejudice against inoculation among the lower ranks has hitherto in a great measure prevented the beneficial effects which it is calculated to produce; for the inoculation of a single child often infects a whole neighbourhood; so that it is alledged, and in many places even appears from the bills of mortality, that upon the whole the deaths by this disorder have rather been increased than diminished since the introduction of inoculation.

This has induced some to propose rejecting the operation, and endeavouring entirely

tirely to prevent the disorder, by the means employed for checking the progress of contagious diseases. This plan however promises but little. It is impossible that such a disease as the small-pox can be entirely eradicated from so immense and populous a country as Europe; and who would propose to banish it from this island while it raged on the Continent, with which we every day have the freest intercourse? nay, were it even possible at once to extirpate it from Europe, would it not be immediately received from the Asiatics? Intercourse among nations is now more frequent than in ancient times. It would be impossible to exclude so infectious a disease from Europe, if it raged on the coasts of the Levant and other western parts of Asia. Unless therefore we can extirpate the disease from the whole world, plans of extirpation are vain.

It is urged indeed that the plague has been banished from most countries of Europe, and that were the proper means employed, we might in like manner banish the

the small-pox.* But can the circumstances of the two complaints be compared? Was the plague ever so general throughout Europe as the small-pox? The former is confined to a few spots. The whole world know when it shews itself, and avoid communication with the places where it rages. It visits chiefly large and populous cities, and is for the most part effectually banished by the removal of crowded and dirty streets, and by having a cautious intercourse with the few places which it still visits, and from which, were the proper means employed, it is more than probable it might also be banished.

Others assert, that is is better to suffer the returns of the small-pox, such as it appeared before the introduction of inoculation, than thus constantly to preserve it amongst us. To this it may be answered, that, admitting that the deaths by the small-pox have not been lessened by the introduction of inoculation, it is evident

* See Vogel's Prælect. Acad. De Cog. et Cur. Morb.

that this is owing to the operation not being sufficiently general.

What have been the effects of inoculation, under proper regulations? At Chester it is found, that the mean number of deaths by the small-pox are 14 annually. Before the institution of a society there for promoting inoculation, the mean number of deaths were 63 annually. It is probable indeed that the time is not very distant when, in many places at least, inoculation will be general, and then comparatively the small-pox will hardly deserve the name of a disease; for by a moderate computation, of those who have been inoculated while in health, properly treated, and in whom no other complaint supervened, not above one in a 150 died.* According indeed to many, particularly late, observations, the pro-

* See the accounts of Drs. Jurin, Monro, and Dimsdale. Dr. Monro's Treatise in particular deserves attention. It contains an answer to certain questions put to him by the delegates of the faculty of medicine at Paris, concerning the inoculation of small-pox. It is entitled an Account of the Inoculation of Small-pox in Scotland, by Alexander Monro, senior.

portion

portion of deaths is much less. It has been computed that at Chester only one in 208 died of the inoculated small-pox. Of 416 patients inoculated at Liverpool, one only died. In the London Small-pox and Inoculation Hospital, of the last 5000, only one in 600 died of the inoculated small-pox.*

Reflecting on these circumstances, instead of endeavouring to eradicate the small-pox,† it should be the aim of physicians to render inoculation and the proper treatment as general as possible. They will thus most effectually check the fatality which has hitherto attended this disease. It is of great consequence therefore to be well acquainted with the practice of inoculation.

The circumstances respecting inoculation which demand attention may be arranged under three heads.

1. The choice of proper matter, and the mode of performing the operation. Inocu-

* See Dr. Woodville's reports respecting the inoculotion of the Variolæ Vaccinæ.

† See the observations on the Cow-pox at the end of this section.

lation should be made as effectual and at the same time as easy for the patient as possible. When the operation is more severe than necessary, we deter people from submiting their children to it. When done carelessly and too slightly, it often fails of producing the disease, which both puts the patient to unnecessary trouble and destroys his confidence in the operator.

2. The state of the patient at the time he is inoculated, and his treatment before and after the operation till the commencement of the eruptive fever. They must be such as afford the best chance of the complaint appearing in the mildest form.

3. Cautions to prevent the introduction of the casual small-pox.

In the first place, of the operation, and the choice of proper matter.

The mode of performing the operation at present generally adopted is extremely simple. A pustule is opened, and the point of a lancet dipped in the matter. This may either be used immediately when received

ceived from the pustule, or it may be allowed to dry, and when about to be used, moistened with warm water.

The matter may be kept for a number of years without losing its power. It is the custom in some parts of the East to keep it for a great length of time, where inoculators often boast of using matter collected by their grand-fathers. Nor does it seem necessary to be particularly careful in defending it from the air. Some experiments have been made to determine whether or not exposure to the air is capable of so altering the properties of variolous matter, as to prevent its producing the disease. "It has not been in my power," Dr. Currie observes in Dr. Haygarth's Sketch of a Plan to exterminate the casual Small-pox, "to "attend to the experiments you suggested, "but I have tried whether variolous matter "exposed to the air, and indeed to the "wind, for thirty days, can communicate "the disease by inoculation, and the re-"sult has been as I expected; the disease "was communicated with the usual cer-

"tainty and success. I inoculated three "patients at the same time; in one the "eruptive fever appeared on the fifth day; "in another on the seventh; and in the "third on the ninth.....My opinion is, that "I shall be able to inoculate with the same "matter, diluted in the same way, many "months or perhaps years hence. The "reason why variolous matter long kept "has sometimes failed in producing the "disease, I apprehend to have been that "the dried matter was not previously re-"duced to a state of fluidity." Many practitioners however prefer recent fluid matter.* It appears from some trials, that matter which has been long kept may produce inflammation and general derangement of the system, and yet fail in producing the small-pox.

The point of the lancet armed with the matter is introduced obliquely beneath the cuticle, so as to wound very slightly, and occasion little or no flow of blood.† In withdrawing

* See the observations of Baron Dimsdale and others.

† It is of consequence to guard against a consider-able

withdrawing the point of the lancet, it is proper to press the wound with the finger, that the parts in contact with the matter may wipe it off the lancet, and thus secure the success of the operation. The wound is so slight that bandages, or plasters of any kind are unnecessary.

Such is at present the most approved and simple mode of performing inoculation. Others have been practised, which put the patient to much uneasiness without answering the purpose any better.* Some do not introduce the lancet, but only scratch the skin; and Mr. Mudge has proposed a method, which he thinks succeeds with more certainty than that generally in use, namely, scratching the skin, and rubbing it with a bit of spunge which has absorbed some variolous matter.† With this part of the subject,

able flow of blood, as this often washes out the matter, and thus prevents the success of the operation.

* See an account of the old modes of inoculating by large incisions, and by vesication, in Dr. Kirkpatrick's Analysis of Inoculation.

† The reader will find an account of this method,

subject, which rather comes under the province of surgery, I shall not detain the reader.

Although it belongs to surgeons to settle all disputes concerning the best modes of performing operations, in some circumstances it is the physician's part to determine when it is proper to recommend them. It is therefore necessary for him to be acquainted with what has been determined respecting the preference to be given to particular kinds of matter, that he may not find himself at a loss when all kinds, or only one kind, of matter can be procured.

Many prefer the matter in a crude state, that is, before it assumes the purulent appearance; and the success which attended the practice of Sutton, a celebrated inoculator in Essex, was by some ascribed to his using the matter in a crude state.† Dr. Dimsdale preferred the matter taken from the inoculated part during the eruptive fever; and some inoculators prefer it at a

and the instrument with which he performs the operation, in his Treatise on the Inoculation of Small-pox.

† See Mr. Chandler's Treatise on Inoculation.

still

still earlier period, supposing that the more crude the matter is, it will produce the disease with the greater certainty.* From the following experiment however it would appear, that matter in a very crude state will sometimes fail to produce the disease. " Messrs. Langworthy and Arscot, " surgeons at Plimpton, in the spring of " 1776, inoculated forty patients, of which " number thirty were inoculated with crude " matter from the arm of a young woman, " five days after she herself had been ino- " culated with concocted matter, which " produced in her pretty smart fever, and a " sufficient number of pustules; the other " ten were inoculated with matter of ano- " ther kind, which I procured in a con- " cocted form from a pustule of the natural " small-pox. The arms of all the forty " patients took the infection, and the latter " ten, after the eruptive fever, had the " small-pox in the usual way. Of the " other thirty, though the infection took

* A surgeon informed me, he had known the crude matter succeed where the maturated had failed to produce the disease.

" place

" place on their arms, so as to inflame " them considerably, and to produce a very " large prominent pustule with matter in " it on each of them; yet not one had any " eruptive fever, or a single subsequent " pustule on any part of the body; but " about the eighth, in some the ninth, and " in others the tenth, day, the inflammation " began to disappear; and about the twelfth " or thirteenth, the pustules on their arms " scabbed off. It is to be remarked too, " that the matter which was in those pus- " tules, having been used to inoculate " others, produced on them exactly the " same appearances, unattended also with " either fever or small-pox.

" It was thought worth while to inocu- " late all those patients with well concocted " matter, in order to see whether or not " the effects of the crude matter had so " altered their constitutions as to render " them incapable of afterwards having the " small-pox. The whole were inoculated " with well-formed matter, and all of them " had the small-pox in the common form."

In the malignant kinds of small-pox the matter

matter always has a crude appearance. It is found however as certainly to produce the disease as the matter of the most benign; and what is remarkable, generally at least, produces it in as mild a form; the mildness or malignity of the small-pox seeming little if at all to depend on the state of the inoculating matter. From the worst kinds of matter, the most favorable forms of the disease have been produced, and from the best matter, the most malignant. The choice of what is termed good matter, therefore, is not of such consequence as at first sight it may appear. Even the daring experiments of inoculating with matter taken from a dead body,* has been practised with safety.

But although we were better convinced than we are† of the safety of inoculating with

* See an Essay by Mr. Chandler. Mr. Keate also inoculated with matter from a dead body, but from an accident no inference respecting its safety can be drawn from his experiment. See Dr. Pearson's observations in the 19th volume of the Medical Commentaries.

† Many experienced practitioners maintain that the choice

with bad matter, yet the general prejudice against it would make a prudent practitioner choose that of a benign kind. Where this cannot be procured, and the patient is evidently in danger of the casual small-pox, we should not hesitate a moment in recommending inoculation from any kind of matter that can be procured.

Nor does the quantity of matter introduced seem to have much, if any, effect in determining the mildness or severity of the disease; an hypothesis on which some attempt to explain the benefit derived from inoculation; the disease, as has been observed a thousand times, proving equally benign or otherwise whether a larger or smaller quantity be introduced. Some practitioners indeed, Burserius, Dr. Fordyce, and others, maintain an opposite opinion, and consider the quantity of matter employed in inoculation a point of much consequence. Burserius observes, that those inoculated by many incisions have the dis-

choice of good matter, though not of such importance as once supposed, has some effect in insuring the mildness of the disease.

ease

ease in a worse form than those who have it from one incision. And Dr. Underwood in his Treatise on the Diseases of Children says, he has observed that when several inoculations have failed, in which case we may also suppose a greater than usual quantity of variolous matter introduced, the disease proves more severe than in other cases.

How far such observations are accurate, it is difficult to say. It is certain that different modes of inoculation have been practised, in which very different quantities of matter were introduced, and all have produced an equally benign form of the disease. "In the case of small-pox," Dr. Cullen observes, "a considerable difference in "the quantity of contagious matter intro- "duced has not discovered any effect in "modifying the disease."

When inoculation fails in producing the disease, the inoculated part nevertheless sometimes inflames and suppurates, as in cases where the disease is about to follow; and it is remarkable, that the matter produced in such cases is as fit for inoculation as that taken from a person actually labouring

ing under the disease.* It has even been found, that if a person, who has already had the small-pox, be inoculated and the wound suppurates, the matter it produces is capable of giving the disease.†

Although it sometimes happens, that in those who have not had the small-pox the inoculated part inflames and suppurates without producing the disease, yet this is comparatively rare. When the part inflames and small pustules are seen surrounding the incision, we may with great certainty expect the disease.

A considerable and early inflammation in the part inoculated is favourable; paleness and flaccidity the reverse; and Dr. Dimsdale even observes, that he has found some

* Mr. Davidson, in the third volume of the Medical Transactions, mentions two instances of children in whom the disease did not appear till after the second inoculation, the first inoculation only producing inflammation and suppuration of the part; from which however matter was taken that produced all the usual symptoms of small-pox.

† This, we are informed by Dr. Rush, Dr. Way ascertained by an experiment made on himself.

degree

degree of stiffness and pain in the axilla to foretel a favourable disease.

The matter of small-pox must be applied to a wound in order to induce the complaint. It was observed above, that Dr. Rush could not induce the small-pox by rubbing the matter on the entire skin; and Dr. Cowell, the same author informs us, gave a negro girl some variolous matter mixed with a dose of physic, which produced no sensible effect.

2. Of the state of body in which inoculation has proved most successful; and the treatment of the patient before and after the operation, till the appearance of the eruptive fever.

It has always been considered one of the chief advantages of inoculation, that by means of it we are enabled to induce the small-pox at a proper age, at a time when the patient is not labouring under any other disease, and after the body has been prepared for receiving it in the mildest form. The subject therefore divides itself into two parts: the state of the person about to be inoculated

inoculated with respect to age and habit; and the preparation necessary, by exercise, diet, or medicines, before and after the operation.

As the view of inoculation is to prevent the casual small-pox, it should be performed early in life. But the tender constitution of infants, for some time after birth, renders the slightest complaints dangerous. Many have therefore laid it down as a rule, that children ought not to be inoculated under two years of age. Very young children sometimes in the inoculated, much more frequently in the casual, small-pox, are carried off by epileptic fits. It is chiefly on this account that most practitioners make it a rule to delay inoculation, at least till the first dentition is over. Another reason for delaying inoculation till children are taken from the breast, is the injury done in this disease by external warmth. Dr. Underwood remarks, that when the mother suckled only with one breast, he has observed the side of the child which lay next her loaded with pustules.

Delaying inoculation however for so long

a

at 2 years
a time is often attended with considerable risque, and it is now generally admitted, that when the patient is in danger of the casual small-pox, inoculation may be recommended at a much earlier period. Dr. Dimsdale observes, that although he is still of opinion that inoculation under two years of age is objectionable, yet he has nevertheless had repeated occasion to inoculate many under that age without a single instance of any fatal consequence. The reader will find in the proceedings of the society of Chester for promoting inoculation, and in other publications, that children have been inoculated within the first month with the best effects. When we are at liberty however to choose the period for inoculation, it is certainly proper that the constitution should have acquired some degree of strength, before we induce any disease however mild.

Dr. Fordyce says, that of children he has known die of the small-pox, more than two-thirds were under nine months. He therefore considers it improper to inoculate before this period. When the child runs no

risque of the casual small-pox, it may be proper to delay it even longer. Dr. Percival thinks the best age for inducing the small-pox is between two and four in stout healthy children, and between three and six in delicate children.

There is perhaps no period of life but that of infancy in which inoculation may not be performed with safety. It is a general opinion that the small-pox is frequently severe in those advanced in life. Boerhaave observes, that the more age has dissipated the fluids and condensed the solids, the more violent is this disease; on this account, he adds, it proves favorable in children, women, and others of a lax habit of body, and the reverse to persons hardened by labour, to men and old people.

By others however the justness of the observation has been called in question, and it is asserted that the small-pox is least severe in young and old people, and most so in those in the vigour of life; and from tables in the second volume of Dr. Percival's Essays, it appears, that the small-pox, in the instances which he gives, was more fatal

fatal to females than males. Some imagine that the age of puberty is particularly unfavorable for inoculation.

Whatever the time of life be, we should if possible avoid inoculating those labouring under other diseases. Dentition, especially if attended with troublesome symptoms, is a sufficient reason to delay inoculation, when it can be delayed with safety.

Children with large heads, particularly those who have been threatened with water in the head, generally have the small-pox in a dangerous form, and are consequently bad subjects for inoculation. Dr. Dimsdale mentions two cases of this kind, in which, although the eruption was favorable, coma supervened and they both died. A similar accident happened under the management of Mr. Charles Maitland, on the introduction of inoculation into Scotland, which procured the operation a very bad reception in that part of the island. In short, inoculation should be performed while the subject is in all respects in good health.

There are some diseases however which shew little or no tendency to increase the

severity of the small-pox. A tendency to scrophula, or even its presence, is not found to increase the danger of the small-pox. Dr. Heberden, in Dr. Kirkpatrick's Analysis of Inoculation, mentions the case of a boy dying of scrophula, who had the small-pox in a very mild form. Dr. Cullen remarks, that several diseases of the skin are equally innocent when complicated with small-pox; and justly observes, "They "are the diseases of the febrile kind, or "those ready to induce or aggravate a fe-"brile state, that especially give the con-"currence that is most dangerous with the "small-pox." Dr. Dimsdale did not wish to inoculate those labouring under any acute disease, or much debility, and he avoided inoculation when any epidemic prevailed.

It may be observed upon the whole however, that the habits of body in which the small-pox is most apt to prove unfavorable are far from being thoroughly ascertained. The sum of all that we know with certainty seems to be, that the disease is apt to be severe in the debilitated, the plethoric, and those labouring under febrile diseases.

diseases. In some families it is particularly unfavorable, instances of which I know, where it is impossible to detect the cause of this peculiarity.

Pregnant women are bad subjects for inoculation, for although the disease generally appears in them in as mild a form as in others, it is apt to be followed by miscarriage. This may sometimes be owing to the fœtus receiving the disease from the mother, of which there are many well-authenticated instances; and it has sometimes happened, that where the mother had but a very few pustules, the child has been found almost covered with them. When the mother is near her time before she is seized with the small-pox, as in a case mentioned in the 13th volume of the Medical Commentaries, the eruptive fever sometimes appears in the child a day or two after birth. The reader will find cases supporting these observations in the 19th volume of the Medical Commentaries, in the 155th and following pages of the 2d volume of Burserius's Institut. Med. Pract. and other works on

this disease. Burserius mentions cases from different authors, in which the fœtus had the disease, from the mother being exposed to its contagion, although it did not produce the small-pox in her; Vogel also observes, that the fœtus may be infected with the small-pox without the mother having it; so that there may be some danger in pregnant women exposing themselves to the contagion of small-pox, although they have had the disease. It is almost unnecessary to observe, that the patient is as secure from a second attack of the disease by having it before, as he is by having it after, birth.

Dr. Pearson says, that inoculating about the sixth month of pregnancy is seldom fatal to the mother, but often kills the fœtus. In about twenty cases of the casual small-pox in the last months of pregnancy, it proved fatal to above three-fourths of the women, and a still larger proportion of the fœtuses.

The occurence of the menses during the small-pox has been regarded as dangerous, but

but many observations, as Camper* observes, prove this opinion to be unfounded. A difficult or very profuse menstruation is certainly unfavorable.

Some constitutions are incapable of having the disease in any form. It is even said that there is a whole family at Geneva† who are incapable of having the small-pox.

Others do not receive the disease at one time, however freely exposed to its contagion, even though repeatedly inoculated, and yet afterwards receive it merely perhaps from approaching those labouring under it. "I know an old nurse," Dr. Huxham ‡ observes, "and one apothecary, who "for many years attended persons and a "great number too in the small-pox, and "yet never had them; nay many that have "industriously endeavoured to catch the "infection by frequenting the chambers of

* See a Treatise by Camper, entitled, Les Avantages de l'Inoculation et la meilleure Methode de l'administrer.

† See Dr. Haygarth's Sketch, &c.

‡ See Huxham's Treatise on Fevers, Small-pox, and Peripneumony.

" the sick, have done it without effect, and " yet some of these persons some months or " years after have been seized with the " small-pox." It has been computed that only one out of 38 escape the small-pox when properly inoculated or otherwise fairly exposed to the contagion.

It has long been a prevalent opinion that a certain regimen previous to inoculation and even medicines are indispensible.

The person to be inoculated is put on a spare diet, desired to use regular exercise, and to take various medicines, generally mercurial or antimonial, for some days before the operation, till the commencement of the eruptive fever. That these precautions by their antiphlogistic tendency are sometimes of use, and that it may be proper to delay feeding children with animal food till after they have had the small-pox, as Dr. Cullen recommends, we have every reason to believe. Many are of opinion however that when the patient is in perfect health, and when the only tendency of a change in diet and a course of medicines is that of inducing a state in some measure different

different from health, they are not only useless, but hurtful. "Gatti," Dr. Baker* observes, "who was sometime ago much "employed in inoculation at Paris, declares "himself an enemy to any general plan of "preparation. In all the Levant," he continues, "where the natural small-pox is as "fatal as elsewhere, and where you may "find old women who have inoculated "10,000 without an accident, the only in-"quiry is, whether or not a person is pre-"pared by nature. All that is considered "is, whether the breath be sweet, the skin "soft, and whether a little wound in it "heals easily."

It is improper however in all cases to neglect every means of preparation. In full habits the eruptive fever often runs high, although this consequence is not so certain as some have supposed it. The reader will find cases, (a very striking one is related by Mr. Mudge) in which patients of the most plethoric habit paid no atten-

* See Dr. now Sir George Baker's Treatise on the Inoculation of Small-pox.

tion

tion whatever to regimen, either before or after inoculation, and yet had the disease in a very mild form. He will even find in Dr. Percival's Essays, that the bark, so generally allowed to increase the inflammatory diathesis, has been given, between inoculation and the eruptive fever, to remove an intermittent, without any bad consequences. From a few facts however no general conclusion can be drawn. We should endeavour to observe a proper medium, neither reducing the strength by unseasonable evacuations, nor inducing the disease on the plethoric, without using precautions to moderate the ensuing fever.

The preparation recommended by Dr. Rush* can never prove hurtful. It consists merely in the use of mild cathartics and a vegetable diet. He reprobates the use of mercurials, to which he attributes the glandular swellings, loss of teeth, and weak habit, which often succeed the small-pox.

We are led to believe however, from a

* See his Medical Inquiries and Observations.

great

great variety of observations, that a prudent use of antimonial and mercurial preparations, previous to inoculation, tends to insure the mildness of the disease. For a proof of this the reader may consult Dr. Gale's Dissertation on the Inoculation of Small-pox in America, Dr. Andrews's Treatise entitled The Practice of Inoculation impartially considered, &c. Dr. Baker's Account of the Suttonian Mode of Inoculation, Mr. Chandler's Treatise on the same subject, and Baron Dimsdale's Treatise entitled The present Mode of Inoculating the Small-pox.

The following was the mode of preparation which Dr. Dimsdale thought most successful. If the patient was debilitated, he endeavoured to restore the strength; if plethoric, to correct this habit. He made it a rule to clear the stomach and intestines, and generally confined the patient to a milk and vegetable diet for nine days before inoculation, during which he purged with Glauber's salt; the night before each purge he gave a dose of calomel, and a small quantity of tartar emetic. The exhibition

of

of the powder and cathartic was generally repeated three times, but the treatment was varied according to the state of the patient. After inoculation, when the inoculated part remained pale, which gave reason to dread a severe disease, he gave the mercurial and antimonial powder every night; and, if it did not prove cathartic, joined with it Glauber's salt or an infusion of senna with manna and tincture of jalap.

It is to be recollected, that the habit of body may be considerably affected by particular states of the weather: that in which rheumatic and other inflammatory diseases are epidemic, and that in which complaints of a contrary tendency, malignant fevers, &c. prevail. In the one case, evacuations will be more frequently serviceable; in the other, more generally pernicious.

In choosing the season for inoculation, the spring is generally preferred, in order to avoid the extremes of heat and cold, and because the epidemic small-pox is generally mildest in this season. It is also observed, that the casual small-pox is milder about the vernal equinox, than when it appears earlier.

earlier.* Dr. Dimsdale, although he preferred the spring, thought there was little objection to inoculating either in summer or winter, provided the patient was protected from the extremes of heat† and cold. The autumn he thought the most exceptionable, on account of the putrid small-pox being most common at this season. Attention to the time of year however, provided there be no malignant epidemic raging, is not of much consequence, since the inoculated small-pox, with proper treatment, is a mild disease at all seasons.

Situation seems often to have more effect in modifying the small-pox. At a distance from large towns it is less apt to appear of the putrid and anomalous kinds, and the more crowded and dirty a city is, the more apt the small-pox is to prove unfavorable. Dr. Walker ‡ ascribes the unusual severity

* See the 5th vol. of Medical Observations and Inquiries.

† Dr. Cleghorn remarks, that he has observed the virulence of the small-pox increase with the heat of the weather.

‡ See his Treatise on the Small-pox.

of

of the small-pox in the city of Cork to the following circumstances. "In the city of "Cork, from its situation upon the edge of "the great Atlantic Ocean, the winds three "parts of the year blow from west and "south west, and drench the inhabitants "in the warm and watery vapours de- "tached from the surface of that wide ex- "tended sea. The city is situated in a deep "valley, built on islands, and surrounded "by branches of the river Lee. There are "considerable marshes to the east and west "of it. Quantities of animal offals oc- "cupy the streets, and particularly the close "confined alleys and lanes. At the season "endemical ~~epidemics~~ diseases rage most, there are "a great number of slaughter-houses in the "north and south suburbs; vast pits con- "taining putrifying blood and ordure, "which even corrupt the northern blasts "which blow down upon the city; vast "quantities of animal offals used by the "common people in the slaughtering sea- "sons, rendered more pernicious by the "quick

"quick transition from diet of another "kind and different nature."*

We cannot doubt that inoculation, by enabling us to induce the small-pox at a time when the state of body is most favourable, is alone a matter of considerable importance; yet we cannot agree with those who, believing that all the advantages of inoculation may be attributed to this, subscribe to the opinion of Dr. Huxham when he observes, "I am persuaded if persons "regularly prepared were to receive the "variolous contagion in the natural way, "far the greater part would have them in a "mild manner."

It appears, from a variety of facts, that the advantages of inoculation are owing neither to the preparation of the patient, nor any other circumstance which we can detect, but to some peculiar disposition in the animal economy, which will ever perhaps remain a secret; for what has been said of the casual small-pox being received

* The malignant small-pox is frequently observed to precede the plague. See Haller's Disput. ad Hist. et Cur. Mob. Pert. vol. v. p. 557.

by

by the lungs, and on this account proving more dangerous, is merely hypothetical.* The other opinions on this subject rest, if possible, on a still worse foundation. It appears, from what was said above, that none of the advantages of inoculation is to be ascribed to the quantity or quality of the matter employed, as some have thought; and with regard to the opinion of the body being peculiarly disposed to the disease when the small-pox is taken in the natural way, and the poison on this account operating more violently, a moment's reflection shews its invalidity, since very few who have not had the complaint will at any time escape it if freely exposed to its contagion. It is unnecessary even to recapitulate the different opinions on this subject. The reader will find another, though not a more successful attempt, in the 2d vol. of the Collect. Soc. Hafn. Obs. 9th.

With respect to the treatment of the

* This opinion seems to receive some support from the practice of the Chinese, who inoculate by putting the dry scales of the small-pox into the nose, and among whom the disease is far from being favourable.

patient

patient after the operation till the commencement of the eruptive fever, it is similar to the treatment previous to the operation, and may easily be collected from what has been said. Animal food and fermented liquors should be avoided, unless there is much debility. Cold, fatigue, and every other cause of fever is highly pernicious. Gentle laxatives are to be continued as the state of the body requires, which should be open; and the continued exhibition of small doses of mercurials and antimonials tends to ensure the mildness of the disease, although they are certainly far from being necessary in the generality of cases. Where there is any thing unfavorable, such as a plethoric habit, an unusual deficiency of inflammation in the inoculated part, &c. they ought never to be neglected.

Dr. Dimsdale believed the excellence of the Suttonian mode of inoculation to consist in the three following circumstances; the last of which we shall presently have occasion to consider at length. 1. The preparation by antimonials and mercurials. 2. Inoculating with recent fluid matter.

3. The free exposure to cold and the laxative course in the eruptive fever.

The most important part of the subject remains to be considered.

3. The cautions to be employed in the practice of inoculation, to prevent the introduction of the casual small-pox.

These, from the first introduction of inoculation, have been too much neglected; to which alone we owe the melancholy reflection, that the fatality of the small-pox has hitherto been little, if at all, diminished by the introduction of inoculation into Britain.

When any one is about to be inoculated, where the small-pox is not already prevalent, all who are accustomed to come to the house, or live near it, should be made acquainted with it, that those who have not had the disease may either be inoculated, or avoid intercourse with the patient and his attendants. It is the duty of the inoculator to insist on this alternative, and to offer inoculation gratis to the poor.

Various plans have been proposed with a view

view wholly to banish the casual small-pox. Dr. Dimsdale inoculated all the inhabitants of a village who had not had the small-pox in one day, having previously removed those who from bad health, or other causes,* were improper subjects for inoculation. And when this can be done, he thinks it should be repeated every five or six years.

This plan however is but ill calculated to banish the casual small-pox. It would be impossible to secure the inhabitants against its introduction during the intervals of inoculation.

No writer has bestowed so much attention on this subject as Dr. Haygarth.† The following are his regulations for preventing the casual small-pox; and from his own observations as well as those of his correspondents, there is reason to believe, that could they be enforced, they would be found sufficient for the purpose. It is the

* See what has been said respecting the habit, age, &c. proper for inoculation.

† See his Treatise, entitled A Sketch of a Plan to exterminate the casual Small-pox from Great-Britain, &c.

opinion of Dr. Haygarth, and most of his correspondents, that clothes, furniture, &c. cannot imbibe the contagion of small-pox from an infected atmosphere, and therefore only communicate the disease when the matter adheres to them. Should future experience contradict this opinion, some addition to the following precautions will be necessary. There is also reason to hope, on the other hand, that experience may prove some of them to be superfluous; if this should not be the case, it is to be feared that they are too various and troublesome to be generally adopted.

"1. Suffer no person who has not had "the small-pox to come into the infectious "house. No visitor, who has any commu- "nication with persons liable to the dis- "temper, should touch or sit down on any "thing infectious.

"2. No patient after the pox have ap- "peared* must be suffered to go into the

* Should it not be, after the appearance of the eruptive fever, since the disease is infectious from its commencement?

"streets

" street or other frequented place. Fresh
" air must be constantly admitted by doors
" and windows into the sick chamber.

" 3. The utmost attention to cleanliness
" is absolutely necessary: during and after
" the distemper, no person, clothes, food,
" furniture, dog, cat, money, medicines,
" or any other thing that is known or sus-
" pected to be bedaubed with matter, spittle,
" or other infectious discharges of the pa-
" tient, should go, or be carried, out of
" the house till they be washed, and till
" they be sufficiently exposed to the fresh
" air. No foul linen or any thing else that
" can retain the poison should be folded
" up, or put into drawers, boxes, or be
" otherwise shut up from the air, but must
" be immediately thrown into water and
" kept there till washed. No attendants
" should touch what is to go into another
" family till their hands are washed. When
" a patient dies of the small-pox, particular
" care should be taken that nothing infec-
" tious be taken out of the house, so as to
" do mischief.

" 4. The patient must not be allowed to

" approach any person liable to the distem-
" per, till every scab has dropped off; till
" all the clothes, furniture, food, and all
" other things touched by the patient du-
" ring the distemper, till the floor of the
" sick chamber, and till the hair, face, and
" hands, have been carefully washed.
" After every thing has been made perfectly
" clean, the doors, windows, drawers,
" boxes, and all other places that can retain
" infectious air, should be kept open, till
" it be cleared out of the house."

When the casual small-pox has actually appeared, then the various means for checking the progress of contagious diseases, enumerated when speaking of typhus, must be had recourse to. The separation of the sick from the healthy is particularly to be attended to, for which purpose a proper place * should be appointed at a small dis-

* There should be a permanent building for this purpose in the neighbourhood of every considerable town, without which it is almost impossible to prevent the casual small-pox among the lower ranks, on account of their refusing to have their children inoculated.

tance

tance from towns for the reception of the poor, who are seized with the disease. Care should be taken to bury the dead privately, and to use proper means to free from the contagion those who recover before they are permitted to return to their houses.

Many have placed confidence in some of the medicines mentioned when speaking of the means of checking contagious diseases, for defending against the contagion of small-pox. Mercury and musk have been particularly recommended, but nothing of this kind is to be depended on. The various means belonging to this head are to be regarded as less efficacious in defending against the contagion of small-pox, than that of typhus. General inoculation will be found the best means of preventing the spreading of the small-pox. It would be fortunate if we could discover as easy and effectual a method of cutting short the progress of other malignant fevers. By taking care that none should be exposed to its contagion but those who have had the

disease or submitted to inoculation,* we place an almost insuperable barrier to the progress of the small-pox;† nor is it necessary,

* A proposal has lately been made in Scotland to render inoculation general, by publishing a set of simple regulations respecting inoculation and the treatment of inoculated small-pox, and endeavouring, with the assistance of the clergy, to induce parents to inoculate their own children. The inoculated small-pox is generally so mild a disease, and the proper mode of treatment in it so simple, that the danger of constantly introducing the casual small-pox appears to be the principal objection to this plan. If the cow-pox, a disease we shall presently have occasion to consider more particularly, be found, as we have reason at present to believe, capable of securing the constitution against the attack of small-pox, there will not be the same objection against inoculating for it in this way, as it is not contagious. It is even a milder disease than the inoculated small-pox.

† Well authenticated cases indeed are on record of the small-pox having attacked the same person a second time or oftener; such cases however are rare. There are instances in Burserius's Inst. Med. Pract. attested by the best authority, of the small-pox having appeared a second or even a third time in the same person. In the 2d vol. of the Collect. Soc. Hafn. there is a well-attested case of the same kind; and a very extraordinary one, quoted from Borellius by Rosen, in the 5th vol. of Haller's Disp. ad Hist. et Cur. Morb. Pert. A woman

cessary that those who have not had the disease should remain at a considerable distance from the infected; it is sufficient that they remain at the distance of a few feet, and be careful not to touch any thing which has been in contact with the sick, or is besmeared with any secretion from their bodies.

It is even the opinion of some, that the contagion of small-pox cannot be applied through the medium of the air, and although it appears from a variety of facts that this opinion is erroneous, it is certain that it is very rarely conveyed by the air to the distance once supposed. The reader will find

woman had the small-pox seven times, and died of it at the age of 118. Mr. Kite, in the 4th vol. of the Mem. of the Medical Society of London, relates several cases, in which there could be no doubt of the small-pox appearing for a second time; and Mr. Withers, in the same vol. mentions an instance of a person labouring under the small-pox, who many years before had had his face deeply pitted and seamed by it. In Dr. Jenner's Continuation of Facts relative to the Variol. Vaccinæ, Dr. Mills relates his own case. He laboured under the small-pox a second time from inoculation.

sufficient

sufficient proofs of this in the experiments of Dr. Ryan.*

The small-pox, contrary to an opinion once prevalent, is infectious from the first attack of the eruptive fever. It has already been hinted, that it has not been accurately ascertained when a person, who has laboured under this disease, is perfectly free of the contagion. It is asserted by Burserius, that if the disease runs its ordinary course, the patient is incapable of communicating it forty days after inoculation, that is, rather more than thirty days after the commencement of the eruptive fever.

The eruptive fever generally makes its appearance at some period from the seventh

* See Dissertations sur les Fievres Infectieuses et Contagieuses, par M. O'Ryan, D. M. de l'Université de Montpelier, &c. There is an account of his experiments in Dr. Haygarth's Sketch, &c. It has been observed, that infants in particular are less liable to the casual small-pox than has been supposed. Dr. Underwood, in his Account of the Diseases of Children, says, that infants in particular are not apt to have the disease in the natural way, and that he has known them sleep in the same cradle with those under it without being infected by them.

or eighth to the tenth or eleventh day after inoculation. In 810 inoculated patients, 519 became feverish before the ninth day, 291 on or after the ninth day, that is, the fever in the proportion of more than five to three comes on before the ninth day. It is observed of the inoculated small-pox, that the earlier the eruptive fever appears after inoculation, the more favorable is the disease.* In the casual small-pox the fever seldom appears before the ninth day after infection. It is allowed that the fever never appears earlier than the fifth day, whether from inoculation or not. It has been known to be as late of appearing as the 16th, 17th, or even 23d day.†

It is a fact of importance, which has been ascertained by a great variety of observations, that after the commencement of the eruptive fever, whether the complaint be the inoculated or casual small-pox, there is no danger of increasing its severity by the

* See Dr. Dimsdale's Treatise.

† See the conclusion of Dr. Haygarth's Sketch, &c. page 539, 548, and 549.

freest

freest exposure to a second infection. It even appears, that the patient might be exposed without danger to the contagion of small-pox as soon as inoculated, provided we could be certain that the inoculation was about to prove successful; the presence of the complaint in consequence of the first application of the contagion obviating any consequence to be apprehended from a succeeding infection.

In the transactions of a society for the improvement of medical and surgical knowledge, among other observations Dr. Fordyce remarks, that if a person be successfully inoculated, and a few days after again inoculated, the fever will appear when the wound from the first inoculation suppurates, and will not be increased when that from the second does so. There is reason to believe indeed, that were a person inoculated immediately after being infected in the natural way, the appearance of the inoculated would prevent that of the casual small-pox; and that the patient, having been infected in the natural way previous to inoculation, would not even increase the severity of the disease.

disease. The reader will find a variety of observations in the works which have been mentioned, in confirmation of these remarks, particularly in the different accounts of the Suttonian method of inoculating. Mr. Sutton did not hesitate to expose his patients in the freest manner to the contagion from the moment they were inoculated.

Such are the principal circumstances to be attended to in the practice of inoculation. We probably owe this, like many other useful inventions, to chance. It has been ascribed to the Circassians, and was first employed by them, it is said, as a means of preserving the beauty of their women. From other observations it would appear, that inoculation originated in Africa. Mr. Colden, in his Letter to Dr. Fothergill on the Malignant Sore Throat, says, that he found, from conversing with several Negroes from Guinea, that inoculation had been long practised in their country, nearly in the same manner and at the same time of life as in Europe; and Mr. Mungo Park, in his

his travels into the interior of Africa, found it so.

But the truth is that inoculation has been practised not only in various parts of Asia and Africa, but even in some parts of Europe, for an unknown length of time; nay it is even certain, that it was long known in the Highlands of Scotland, and in Wales, before its introduction into England, so that it is probable, that accident suggested the expedient in most places where the small-pox had been long known, independently of any intercourse they had with each other; and what adds to the probability of this opinion is, that in most places where inoculation can be traced back for a considerable length of time, it seems to have been practised chiefly by old women before it was adopted by regular practitioners. Had it been imported from a distance, those who were best informed would have been soonest acquainted with it, as happened in England; but being suggested by accident, it would probably originate among the most numerous, that is the more ignorant, classes of society, and be only gradually

gradually adopted by the better informed; as seems to have been equally the case in Africa, Asia, and Europe.

It was first introduced into England in April 1721, at which time Mr. Charles Maitland inoculated the daughter of Lady Mary Wortley Montague; and soon after, some successful trials having been made on criminals, the children of the Royal Family were inoculated in London in 1726. Mr. Maitland also introduced inoculation into the Lowlands of Scotland, where he met with difficulties owing to an accident mentioned above. Since his time, from a variety of misrepresentations, it has occasionally met with much opposition, and once or twice has nearly fallen into neglect. Dumfries was one of the first places where it became common. It was introduced there in 1733, and as the casual small-pox often appeared in this place in a very bad form, the great advantage derived from inoculation soon rendered it pretty general.

There is no difference in the mildest kind of small-pox whether received in the natural way, or by inoculation. The great

difference

difference between the casual and inoculated small-pox is, that the former, although sometimes very mild, is much more generally of a worse kind, nor is it possible to insure its being mild by any precaution hitherto discovered; while the inoculated small-pox on the contrary, is almost always favorable, unless the patient is injured by improper treatment. We often indeed meet with physicians of extensive practice who declare they never saw the secondary fever supervene in the inoculated small-pox. At the same time it must be confessed, that a practitioner may be deceived if, with every attention to the preparation and mode of treatment, he expects never to see a troublesome, or even a fatal, case of inoculated small-pox.

Inoculation also has the advantage of enabling us to practise with more certainty in the eruptive fever, in which the diagnostic symptoms are sometimes so obscure, that when the disease is taken in the natural way we cannot possitively determine whether it is the small-pox or not, till the eruption appears. When the eruptive fever

ver appears at the usual time after inoculation, there can be no doubt respecting its nature.

The circumstances which have tended chiefly to prevent inoculation becoming general, are certain religious opinions, and the fear of communicating other diseases along with the small-pox. Many conceive that they are not justified in inducing disease on their children, at a time when in the natural course of things they might escape it; and it is only in late times that this mode of reasoning has been confined to the uninformed. In some places they have reasoned in a different way, and conceived it culpable to neglect so simple a means of converting a very dreadful disease, which sooner or later in all probability their children would labour under, into one so mild as hardly to deserve the name. According as one or other of these opinions has prevailed, inoculation has become more or less general.* The one is often adduced with success against the other; against the

* See Dr. Monro's Treatise on Inoculation.

former it has also been frequently and very justly urged, that by the same mode of reasoning we must lay aside the whole practice of medicine. Are not vomiting, purging, sweating, blistering, &c. so many means of inducing slight diseases, in order to avoid or remove more dangerous ones?

With respect to the opinion that other diseases may be communicated along with the small-pox, it is now generally regarded as unfounded. Scrophula is the disease which has been chiefly dreaded; but notwithstanding matter is every day taken from scrophulous patients, I have not met with, either in reading, or conversing with those extensively engaged in the practice of inoculation, one unequivocal instance of this disease being communicated along with the small-pox. The reader will find in a treatise entitled an Account of the Preparation and Management necessary to Inoculation, by Mr. Burgess, an account of three persons inoculated from a patient labouring under syphilis, all of whom had the small-pox in a very mild form, and grew up perfectly healthy. Dr. Kirkpatrick in his Analysis

lysis of Inoculation mentions a similar instance in which the event was the same. I have been informed on respectable authority, of several cases in which a cutaneous disease seems to have been communicated along with the small-pox. These cases are the same which Dr. Jenner mentions in one of his publications on the variolæ vaccinæ.

From what has been said of inoculation it appears, that the chief circumstance which has prevented the salutary effects, that under proper management it is certainly calculated to produce, is, that the inoculated, like the casual small-pox, is contagious; so that both are generally introduced at the same time, and with all the care that can be taken there will always be a considerable risk of this. Were the inoculated small-pox not contagious, or could we induce any other disease equally mild and equally a preservative against the small-pox, which could only be communicated by inoculation, we might hope that the casual small-pox would in a short time be wholly banished. Such a disease has

lately engaged much of the attention of medical men.

The Cow-pox has been long known in some parts of England, and even known as a preventive against the small-pox, but Dr. Jenner first called the attention of the public to it, in a treatise entitled, "An In-" quiry into the Causes and Effects of the "Variolæ Vaccinæ, &c."

Cows are subject to an affection of the teats which appears in irregular pustules of a blueish or livid colour, surrounded by an erysipelatous inflammation. These if neglected often degenerate into troublesome eating sores, the animals seem indisposed, and the secretion of milk is lessened.

Inflamed spots often appear on the hands and wrists of those employed in milking such cows, at first assuming the appearance of small vesications, similar to those produced by scalds; they quickly however run to suppuration, the edges of the suppurating parts, which are generally circular, being raised and of a blueish colour. Tumors appear in the axillæ, and all the usual symptoms of fever with more or less severity

severity frequently supervene, occasionally attended with pains in the limbs and loins, vomiting, head-ach, and even though very rarely delirium.

These symptoms continue from one to three or four days, leaving troublesome sores on the hands, sometimes becoming phagedenic. The lips, nostrils, eye-lids, &c. are also sometimes affected with ulceration, but this seems to proceed from the patient touching those parts with the hands, for where eruptions appear in the cow-pox they are not apt to degenerate into sores.

In some parts of England the oldest farmers remember this complaint from their youngest days; and had always considered it as a preservative against the small-pox. This induced Dr. Jenner to inoculate with the matter of cow-pox, in order to determine whether or not the disease possessed this property. And we have now reason to believe, from a very large body of evidence, afforded by the experience of Dr. Jenner, his correspondents, and others, that those who have laboured under this

disease are incapable of having the small-pox.

Dr. Woodville among others inoculated 400 patients for the small-pox, who had formerly laboured under the cow-pox, without being able to induce the former disease in any of them. "Upwards of 6000 persons," Dr. Jenner observes in his Continuation of Facts and Observations relative to the Cow-pox, "have now been inoculated with the virus of cow-pox, and the far greater part of them have since been inoculated with that of small-pox, and exposed to its infection in every rational way that could be devised, without effect." See also the Medical and Physical Journal for July 1800, p. 22 and 23.

Some have doubted whether the security against attacks of small-pox from having had cow-pox, will be permanent. Dr. Jenner among others mentions one case in which the constitution resisted the small-pox 53 years after the patient had had the cow-pox.

It is true indeed that cases have been adduced by Dr. Beddoes in his Medical Contributions,

tributions, Dr. Sims in the Medical and Physical Journal, and others, in which those supposed to have had the cow-pox were still found liable to the small-pox. Such patients however, Dr. Jenner alledges, had not laboured under the true cow-pox, but a disease similar to it, to which cows are also subject, and which, he thinks, may be distinguished from the true cow-pox, by being a milder disease, having no blue tint, nor erysipelatous margin, creating no general derangement, and by quickly terminating in a scab. Many cases however of the true cow-pox are attended with little or no derangement of the system; the blue tint is sometimes not to be perceived,* and it is not uncommon for a scab to be formed; so that the foregoing diagnosis will not enable us with any certainty to distinguish the true and spurious form of the disease; this point therefore remains to be determined.

Dr. Jenner also gives other reasons for

* Several engaged in the inoculation of cow-pox have assured me that they often could perceive neither the general derangement nor blue tint.

believing that some similar diseases may have been mistaken for the cow-pox. Variolous matter, he observes, may by keeping undergo such a change, either from putrefaction or some other cause, as not to be capable of communicating the small-pox, yet it still produces inflammation and matter in the part, swelling of the axillary glands, general indisposition, and eruptions. Dr. Jenner thinks, the matter of the cow-pox may undergo a similar change.* He also thinks it probable, that the matter of the cow-pox when it has degenerated into ulcers, may not produce the disease, but a train of symptoms resembling it. Lastly, he remarks, the disease produced immediately from the horse may be different from the cow-pox.

Concerning the origin of the cow-pox there is some difference of opinion. Horses are subject to inflammation and swelling in the heel, which farriers term the grease. It is the opinion of some that the cow-pox derives its origin from this complaint.

* Mr. Kelson's observations in the Medical and Physical Journal tend to confirm this supposition.

Those

Those employed in dressing the heels of such horses, and afterwards in milking cows, it is said, communicate the complaint to the latter. It throws some obscurity on this part of the subject however, that the matter of the horse should produce the cow-pox in the cow, and not in the human body, which appears equally susceptible of it; for it is admitted that a horse rarely infects his dresser; and Dr. Woodville, in his Reports of a Series of Inoculations for the Variolæ Vaccinæ, &c. relates experiments in which the matter produced by the grease in horses, taken in its various stages, did not produce the cow-pox by inoculation in cows, neither did this or other morbid matter from horses produce any effect on the human body. "If the thing could have "been procured from greasy-heeled horses," Mr. Kelson observes, in the Medical and Physical Journal for July 1800, "I should "have had the means of propagating the "disease some months sooner." "I left no "experiment untried upon my poor cows "to procure it." It would appear, on the contrary, from some other observations, that not

not only the matter produced by the heel, but that produced by other parts of the horse, is capable of occasioning the disease in cows.*

Another circumstance which has occasioned much difference of opinion respecting this disease, is, that in some cases it has been attended with eruptions. Dr. Woodville says, that about three-fifths of his patients had pustules on different parts of the body, resembling those of the small-pox. The appearance of pustules Dr. Jenner is inclined to attribute to the small-pox matter having been used instead of, or mixed with, that of the cow-pox; and observes, that all his correspondents who met with small-pox-like pustules, had the cow-pox matter from the Small-pox Inoculation Hospital in London.

There are several circumstances however which lead us to question the justness of this opinion. Dr. Woodville, in order to determine the effects of mixing the two

* See Dr. Jenner's first publication above alluded to.

matters

matters, made the following experiment: "Twenty-eight patients were on the same "day inoculated with the matter of cow-"pox and that of small-pox mixed together "in equal quantities, in order to try which "would prevail, or if it were possible to "produce a hybrid disease by an union "of both. The result was, that in more "than one-half of the patients thus inocu-"culated, the local affection distinctly as-"sumed the characters of the cow-pox. In "the others it more resembled the small-pox, "but in none of them was there much in-"disposition or many pustules.

"At the request of Dr. Jenner, I trans-"mitted to him in Gloucestershire, some "of the cow-pox matter from the patients "then under my care, which he used for "the purpose of inoculation. After a trial "of it he informed me, that the rise, pro-"gress, and termination of the pustule "created by this virus on the arm, was "exactly that of the true uncontaminated "cow-pox. The matter sent was taken "from the arm of Ann Bumpus, who had "310 pustules, all of which suppurated, yet

"with

" with the matter of this stock Dr. Jenner " inoculated twenty and another gentleman " in the same county 140 persons without " producing any pustules which maturated.

" This fact would appear to confirm an " opinion entertained by Dr. Jenner in his " second publication on the variolæ vaccinæ. " He seems disposed to attribute the pus- " tules which so often attended this disease " in London and its vicinity to some pecu- " liar influence of the town air. But of the " cases which I have stated, several were " those of patients who were inoculated " eight miles distance from London, yet " these patients, in the proportion of about " one in five, had an eruption. And at a " small village still further from London, " eighteen persons were inoculated with " similar matter, in all of whom it pro- " duced pustules."

There are also some other facts which would induce us to believe, that the eruption is not the consequence of any admixture of variolous matter, but peculiar to the cow-pox, for even those pustules which maturate do not run the same course with the

the pustules of small-pox. Mr. Jukes, surgeon at Stourport, who has been extensively engaged in the inoculation of cow-pox, has favored me with some very pertinent remarks, which his accuracy of observation permits me to quote with confidence. The matter he used was procured from Dr. Woodville. With respect to the eruption, he observes, "Several of my patients this "spring have had pustules, few of which "have come to suppuration; those that did, "and which were well characterised, were "of shorter duration than the small-pox "pustules." From this it appears, that pustules occasionally appear in other parts of the country as well as in the neighbourhood of London, but that their duration, if it be found uniformly such as in Mr. Jukes's patients, will be a sufficient diagnostic between them and small-pox pustules. At other times, Mr. Jukes, although inoculating with the matter originally from the small-pox hospital, has not met with pustules in any of his patients. "I inocu-"lated eleven children," he observes, "twelve months ago, none of whom had "pustules."

Comparing

Comparing these different observations, we should be inclined to believe, that a peculiar eruption belongs to the cow-pox, the appearance of which is determined by some peculiarity in the situation or season, which we cannot at present detect. Future observation however must determine respecting the nature of this eruption.

The great point being admitted, that the cow-pox secures the constitution against the small-pox, the next questions of importance respect the prognosis and the contagious nature of the cow-pox. On these heads there is less difference of opinion.

Respecting the prognosis, Dr. Jenner observes that the cow-pox is never fatal; and the experience of all, (with the exception of Dr. Woodville) who have written on the disease, in this respect agrees with Dr. Jenner's. Dr. Woodville, in his Reports of a Series of Inoculations for the Var. Vacc. mentions the case of an infant at the breast, in whom the disease proved fatal; it had about 80 or 100 pustules; the eruption came out on the seventh, and it died on the eleventh day after inoculation. It was

carried

carried off by epileptic fits, which first appeared on the seventh day.

The cow-pox does not appear to be attended with any particular danger in pregnant women.* Dr. Woodville found, from an experiment made on a large scale, that in cow-pox, the matter from the mildest cases, upon the whole, produces the mildest disease; and the result of this experiment is confirmed by other observations.†

Dr. Woodville is also the only writer who considers the cow-pox as ever contagious. When the disease produces pustules, he observes, it may be taken by infection; he saw two cases in which the disease was received in this way; in one the eruption was

* See Dr. Marshall's observations in Dr. Jenner's Continuation, &c.

† See the observations of Mr. Kelson in the Medical and Physical Journal. In the different numbers of this work the reader will find a variety of papers containing much information respecting the cow-pox; which is the more valuable, as it comes from different quarters and from people wholly unconnected with each other.

confluent

confluent and the disease severe; in the other it was mild.

It is certainly very rarely contagious. Dr. Jenner observes, that it is not even communicated by sleeping with those labouring under it. Dr. Pearson * and others make similar observations. Mr. Kelson, in the paper just alluded to, observes, "I selected "about forty people in our work-house, "and inoculated half of them, some in "both arms, and fixed them to sleep with "those who had not had it; but in no in-"stance was it communicated to the others. "I broke the pustules and frequently made "them smell the parts, but to no effect."

It is probable that the matter of cow-pox may undergo such a change by keeping that it shall be incapable of exciting the disease, but it appears from a variety of observations that it is not changed by passing through different constitutions. Whether the matter is taken from the cow, or from the human subject inoculated from

* See Dr. Pearson's Inquiry concerning the History of the Cow-pox, &c.

the

the cow, or has passed through a variety of constitutions, the disease is still the same.*

Inoculation for the cow-pox, as far as I can learn from those employed in this practice, more frequently fails than that for small-pox, and more frequently the inoculated part produces a troublesome ulceration. Dr. Woodville remarks that he never saw the part ulcerate. With most inoculators this has been a frequent accident, and the treatment of the inoculated part therefore has demanded some attention. In Dr. Jenner's first publication, he advises us, after the constitution is affected, to destroy the pustules with unguentum hydrargiri nitrati, or a more speedy caustic. But in his last publication he observes, "In the early part "of this enquiry, I felt far more anxious "respecting the inflammation of the inocu- "lated part than at present; yet that this "affection will go on to a greater extent "than could be wished, is a circumstance "sometimes to be expected. As this can "be checked or even entirely subdued by

* See Dr. Jenner's Continuation, &c.

" very simple means, I see no reason why " the patient should feel an uneasy hour, be- " cause an application may not be abso- " lutely necessary. About the tenth or " eleventh day, if the pustule has proceeded " regularly, the appearance of the arm will " almost to a certainty indicate whether " this is to be expected or not. Should it " happen, nothing more need be done than " to apply a single drop of the aqua lythar- " gyr. acetati upon the pustule, and having " suffered it to remain two or three minutes " to cover the effloresence surrounding the " pustule with a piece of linen dipped in " the aqua lythargyr. compos. The former " may be repeated twice or thrice during " the day, the latter as often as it may feel " agreeable to the patient."

As far as we are acquainted with the cow-pox, we have reason to believe that there is no danger of communicating other diseases along with it. And with respect to preparation Mr. Kelson observes, " I " never thought it necessary to give a dose " of physic either after or before inocula- " tion."

The

The small-pox is not always a security against the cow-pox. "Although," Dr. Jenner observes,* "the susceptibility of "the virus of the cow-pox is for the most "part lost in those who have had the small-"pox, yet in some constitutions it is only "partially destroyed, and in others it does "not appear to be in the least diminished." The matter of the cow-pox from the human subject produces the disease in cows. The variolous matter does not produce the small-pox in them.

SECT. III.

Of the Morbid Appearances on Dissection in those who die of the Small-pox.

IN those who have died under a load of pustules, the nares and inside of the cheeks are often found covered with them, and the teeth are besmeared with a thick viscid saliva. Pustules are frequently observed on the upper, very rarely on the under, part of the tongue, which is better moistened with

* See his Continuation, &c.

saliva; the palate is often covered with them; they also frequently occupy the more external, very rarely the internal, parts of the meatus auditorius.

The maxillary, frontal, and other sinuses of the face are free from any morbid appearance. The cellular substance of the face, as well as of other parts of the body, especially where the swelling is most considerable, is distended with a serous fluid as in anasarca.

On removing the cranium the dura mater appears perfectly sound, but the vessels of the brain, as in most other cases where coma is a frequent symptom, appear more turgid and filled with a darker coloured blood than usual, and a greater quantity of serous fluid is found, particularly towards the base of the brain, "Circa infundibu-"lum, integra illa arachnoideæ vagina quæ "nervos tertii paris, adsitasque partes con-"cludit, saccum aqua plenum referebat."* In other respects the brain is generally sound.

* See Cottunnius de Sede Variolarum, p. 22.

On

On examining the parts situated in the neck, the œsophagus is found free of pustules, even where the pharynx is loaded with them; or if any be observed in it, they are towards the upper part. The state of the larynx and trachea is often very different. These with the bronchiæ as far as their third division are sometimes more or less loaded with pustules, from which, and the state of the nares, we readily account for the dyspnœa and cough which frequently attend this disease. It sometimes happens however even in the worst forms of the disease that the wind-pipe is free from pustules. Tissot says he has dissected some so covered with pustules that there was scarcely room for one more, without finding any pustules in the larynx or trachea. The trachea is sometimes covered with a whitish crust which is easily separated, and the secretion from the bronchiæ is now and then tinged with blood.

The fluid of the pericardium is also sometimes tinged with blood, and small particles like coagulated blood broken down now and then appear floating in it. The surface

of the heart has been found rougher than usual, and polypi are sometimes found in its cavities. It is doubtful if any of these appearances be essentially connected with the disease. With respect to the last, it is a common appearance after death, whatever be the complaint of which the patient dies. The lungs have often a darker appearance, and their moisture is more copious than usual. When no inflammatory affection has supervened, they are in other respects sound. The form of the thorax has been observed considerably affected by enlargement of some of the abdominal viscera; this seems to be merely accidental.

The various parts, as the mouth, pharynx, larynx, trachea, &c. which are sometimes covered with pustules, are now and then in the worst cases affected with gangrene.

There are but few morbid appearances in the abdomen. In the stomach there is sometimes found a thick whitish matter, which also frequently besmears the œsophagus, but this is a common appearance of mucus when it has lain in these cavities for a considerable length of time. In examining

amining bodies we often meet with morbid appearances which cannot be regarded as the effects of the disease of which the patient died, as they are not observed in perhaps one of 50 cases. Thus in those who die of the small-pox, the liver is sometimes enlarged, sometimes soft, at other times hard and gritty, now and then hydatids are found in it. The state of the bowels also varies; worms, for example, or traces of inflammation, are sometimes found in the stomach and intestines. None of these appearances throw any light on the ratio symptomatum, nor indeed seem at all connected with the disease.

What principally demands our attention in the abdomen is, that pustules are never found on any of its viscera. Some have asserted the contrary, but it appears probable from the observations of Cottunnius that they had mistaken small lymphatic glands for pustules. He dissected forty bodies in the presence of several people, without observing any pustules on the stomach or intestines. "Did variolous pustules," Dr. Walker remarks, "invest the external

" membrane of the lungs, liver, stomach " or intestines, and pass through the com- " mon stages of inflammation and suppura- " tion, we might expect a regular course of " complaints more urgent and distressing, " than what occurs on the surface of the " body; but we never find this to be the " case."

It appears then that variolous pustules never attack the cavities of the body, except those to which the air has free access; as the nose, mouth, trachea, the larger branches of the bronchiæ, and the outermost part of the meatus auditorius. It has also been observed in cases of prolapsus ani, that pustules very frequently attack that part of the gut which is exposed to the air.

Cottunnius alledges, that pustules appear only on those parts which are exposed to the air, because moisture prevents their appearance; and in confirmation of this opinion, he observes that if the eye-lids be kept moist by wet bread from the first attack of the disease, pustules never appear upon them, and by the same means, he alledges, pustules may be prevented on other parts.

This

This opinion however is invalidated by the fætus in utero being subject to the variolous eruption.

The seat of the pustules is neither the true skin nor the cuticle, but the mucus which lies between them. The author just mentioned made frequent dissections in order to determine this point. "Quoties "pustulam incipientem dissecui, vidi cuti- "culam elevatam ad pustulæ formam, cutis "corpore intacto, et tumoris immuni."* The seat of the pustules, a question at one time much agitated, is thus very accurately ascertained; but this knowledge has not hitherto improved the treatment of the disease.

SECT. IV.

Of the Treatment of Small-pox.

FOR the sake of perspicuity I shall divide the treatment of small-pox into that of the Distinct and that of the Confluent forms of the disease; or rather, I shall consider at

* Cuttunnius de Sede Var. p. 202.

length

length the mode of treatment in the former, and afterwards point out the circumstances in which the treatment of the Confluent differs from that of the Distinct. And farther, to avoid confusion I shall refer to the end of this section, for the means to be employed when those symptoms which have been termed anomalous appear, which will prevent interruption in laying down the general plan of treatment.

1. Of the treatment of the Distinct Small-pox.

It was soon observed that the appearance of the eruption in small-pox generally brings relief, and from this circumstance very unwarrantable inferences were drawn, which for a long time influenced the practice in this complaint, and, it cannot be denied, greatly increased its fatality.

Because the eruption was generally attended with a remission of the symptoms, it was inferred, that the more copious the eruption, the more relief it would bring. Every means tending to promote the eruption were therefore employed, and whatever

ever tended to check it was deemed pernicious. By external warmth and stimulating medicines, physicians endeavoured to support the fever; while evacuations and whatever else tended to moderate excitement, was carefully shunned.

A very extensive experience has now unfolded the tendency of these maxims; and established in their stead others of a very different nature. So far from the most copious eruption bringing most relief, the relief is always most complete, when the eruption is most scanty; so that instead of supporting the excitement, that the eruption may be copious; the indication in the eruptive fever, which in the distinct small-pox is always a synocha, is to moderate excitement, that the pustules may be as few as possible. All that was said of this indication in speaking of the treatment of synocha, is nearly applicable to the case before us.

The chief difference between the treatment of the eruptive fever of the distinct small-pox and the treatment of synocha arising from other causes, is, that in the former, the means for diminishing excitement

ment must be more vigorous in proportion to the excitement, than in the latter. In common synocha, which is succeeded by typhus, a liberal use of antiphlogistic measures is seldom warrantable. In the eruptive fever of the distinct small-pox, on the contrary, where the synocha is not succeeded by typhus but terminated by the appearance of the eruption, the same degree of excitement warrants more vigorous antiphlogistic measures.

Besides in synocha, it is not only dangerous, but no advantage is to be expected from reducing the excitement, unless very considerable. In the eruptive fever of the distinct small-pox, and we shall afterwards find in most cases of the confluent also, it is not merely safe, but the best effects are to be expected from it, the severity of the ensuing disease being generally proportioned to the degree of excitement which prevails in the eruptive fever. "The good or bad "management of the eruptive fever," Dr. Nisbet* justly observes, "in most habits

* See the Transactions of the Newhaven Society.

"stamps

" stamps the extent and future progress of " the disease, perhaps I may venture to say " the very nature of the pock." " It is " probable," says Dr. Cullen, " that the " measures taken for moderating the erup- " tive fever and inflammatory state of the " skin afford the greatest improvement " which has been made in the practice of " inoculation."

Nay the very effects which we dread from evacuations in the common synocha, may be the consequence of avoiding them in the eruptive fever of small-pox; for wherever the eruptive fever runs high, the secondary fever is apt to supervene; and this in spite of all we can do often degenerates into an alarming typhus.

It is not to be inferred however from what has been said that the use of antiphlogistic measures and particularly evacuations cannot be too free. Here, as in all other cases of increased excitement, we are not to overlook one of the most valuable maxims in medicine, that the excitement is to be diminished with as little expence of strength as possible.

Such

Such are the principles afforded by experience for conducting the treatment of the eruptive fever of small-pox when it is a synocha. It will be necessary to take a more particular view of the several means employed at this period.

In the practice of inoculation, it appears from what was said above, a light diet for sometime previous to the appearance of the eruptive fever is proper, except in very debilitated habits. After the commencement of this fever such a diet becomes still more indispensible. It should be as diluent and cooling as possible. Some advise abstaining from all aliment but fresh acessent fruits, at this period, if the excitement be considerable. Whey mixed with acids has been regarded as the best drink, milk has also been warmly recomended by Rhazes and others. M. De Lassone bestows the most extravagant encomiums on it. He particularly recommends it in the confluent small-pox with a decoction of parsley roots, which he thinks the only articles of diet necessary. Milk he found particularly serviceable when the diarrhœa was profuse, and

for

for moderating the pustulary affection of the fauces. We must always make a large allowance in reading the encomiums bestowed on a favourite remedy. On comparing together the observations of a variety of writers we shall find reason to believe that provided the diet in this case be mucilaginous, diluent, and refrigerant, it is of little consequence what articles compose it. To such a diet it is proper in almost all cases to add other means of diminishing excitement.

Few medicines tend more to diminish excitement in idiopathic fevers than emetics. When the symptoms are at all considerable, they are particularly useful in the eruptive fever of small-pox, especially when the stomach is loaded, as often happens in this complaint. At the commencement of the eruptive fever, emetics, Rosen * remarks, are recommended by all. They are never to be omitted, he observes in another place, unless contraindicated by the presence of

* Haller's Disput. ad Hist. et Cur. Morb. Pert. vol.v.

gastritis.

gastritis. An emetic has been regarded as particularly useful at the commencement of the casual small-pox, from the opinion that the contagion is received by the stomach. It is too severe a remedy to be generally employed in so mild a disease as the inoculated small-pox.

The class of medicines which have been termed refrigerant are of more general use. Of these, nitre and saline draughts given in the state of effervescence, are esteemed the best; but the most useful of the neutral salts in the eruptive fever of small-pox are those best calculated to produce a cathartic effect.

I shall afterwards have occasion to speak more at length of the use of cathartics in the small-pox; it is enough at present to observe, that the sulphate of soda or any other cathartic salt, repeated at intervals, so as to support a moderate catharsis, forms an essential part of the treatment of the eruptive fever. The bowels are apt to be costive, and costiveness is particularly unfavorable in the small-pox, and especially in the eruptive fever.

Much

Much purging however is not necessary but hurtful in mild cases; which is admitted by Dr. Walker and others, who make a very liberal use of cathartics in the most alarming forms of the disease. In the distinct small-pox the repetition of cathartics is to be regulated by the degree and obstinacy of the symptoms of increased excitement, particularly the strength and hardness of the pulse. This we shall find cannot be said of all cases of the confluent small-pox.

Boerhaave, Mead, Tennent, and others, have insisted on the advantage of mercurial cathartics in the small-pox. Dr. Fowler in particular, in his Inaugural Dissertation, which was written after he had been sometime engaged in practice, speaks in the highest terms of mercury in this complaint. When it is given so as gently to affect the mouth, the disease, he maintains, is as certainly rendered mild as when it produces catharsis. Mercury, he asserts, renders even the mildest cases more mild and of shorter duration. It often, according to Dr. Fowler, renders the casual small-pox as mild as the inoculated, and almost always

milder than might have been expected. He confesses indeed, that the small-pox has sometimes proved severe in those under a course of mercury,* but observes, that a few cases cannot be adduced as an argument against a remedy generally successful. The acknowledged tendency of mercury to obviate the inflammatory diathesis is in favour of Dr. Fowler's observations.

Whatever cathartic we employ, the occasional use of cooling clysters is always useful when the excitement runs high.

It is remarkable that Sydenham made little use of cathartics in the small-pox, which tended to confirm a prejudice against them, at the commencement of the disease, that prevails in some places even to this day. Sydenham however very generally recommended another evacuation, the propriety of which is now called in question in 99 cases of a 100.

He made a very free use of the lancet, and in this practice many of his successors have persevered. "Si vel minime suspicari

* Cases of this kind are mentioned by Dr. Fordyce.

"liceat,"

"liceat," says Sydenham, "variolas mox "erumpentes, e confluentium genere futuras "esse; utile prorsus erit ut, non solum "sanguis quam primum mittatur, sed et "emeticum propinetur ob rationes alio in "loco fuse dicendas." Huxham also frequently had recourse to venesection in the small-pox, although he admits the impropriety of recommending it in certain cases in which Sydenham believed it useful. These will afterwards be considered; in the mean time let us endeavour to ascertain when blood-letting is to be employed in the distinct small-pox.

It is an observation with a few exceptions universally applicable, that blood-letting is only to be recommended when the effects expected from it cannot be procured by other remedies. Of all the means employed by the physician it is the most dangerous. There is no disease which tends more directly to impair the powers of life; and in the most dangerous cases it is often a doubtful point whether the disease, or the blood-letting which relieves it, is most to be dreaded.

It is true indeed, that in most cases of unimpaired vigour, a moderate loss of blood is not attended with danger. But in the strongest its frequent repetition is always to be feared, and a prudent physician, as he cannot with absolute certainty foresee the course of almost any disease, and still less what new diseases may supervene, will choose to reserve so powerful a remedy, in case symptoms should appear that render its exhibition necessary. One of the first maxims in the treatment of febrile diseases is to save the patient's strength as much as possible, that our practice may have sufficient latitude, if I may use the expression; when it is cramped by a debilitated habit, the danger is always great. I shall have many opportunities of illustrating these observations. What practitioner has not seen cases prove fatal, because the patient was too weak to bear the loss of a few ounces of blood?

In the present case then we are to enquire when advantage is to be expected from blood-letting, which cannot be procured by less debilitating means. The question is very

very easily answered, if it be admitted that diminution of excitement is the only effect to be expected from blood-letting in idiopathic fevers; which is evident, as far as I can judge, from what was said of blood-letting when considering the treatment of intermitting and continued fever; or if the reader does not deem this sufficient, let him take the trouble to compare together the facts there alluded to, or to be found in the various works on the disease we are considering. This is not one of the many points in medicine concerning which, facts are wanting; it has been sufficiently ascertained by a very ample and fatal experience.

If then the diminution of excitement is the only object we have in view, shall we unnecessarily reduce the strength by blood-letting, while safer measures will produce this effect? If exposure to cool air or a mild cathartic will sufficiently diminish the excitement, what need is there for venesection? We are not, says Burserius, from the appearance of one or two symptoms indicating blood-letting, at once and without consideration to have recourse to this re-

medy in the small-pox, unless such symptoms be constant and vehement, and such as leave no room to doubt of the propriety of blood-letting; for blood-letting may often be deferred or omitted without running any risk.

When the increased excitement resists gentler means, as it is of the greatest consequence that it should be reduced at an early period, we must have recourse to venesection; and here the following remark of Sydenham is fully warranted by experience, "Vulgare illud atque tralatitium ar-"gumentum, quo adversus phlebotomiam "aliasque evacuationes utuntur, nempe, "quod non liceat a circumferentia ad cen-"trum movere humores, cum natura in hoc "morbo contrarium adfectare videatur, nul-"larum plane virium est."

Where blood-letting is improper before the eruption, it must be still more so after it, when the fever either becomes milder or wholly disappears. Even in the distinct small-pox indeed, the secondary fever sometimes supervenes. At its commencement it is a synocha, and we must again have recourse

course to blood-letting if the symptoms resist other means, remembering however that now the fever will not be relieved by the appearance of an eruption, but will suddenly assume the form of typhus if the antiphlogistic plan be pushed too far.

Some authors, and those of the highest authority, have recommended blood-letting at the very termination of the complaint, or rather after every symptom had disappeared. "Die decimo quarto," Sydenham observes, "ægrum e lecto surgere permisi, vicesimo "primo sanguinem e brachio educendum "curavi." "Superest ut dicam," says Dr. Mead,* "nullam febrem magis requirere, ut "morbi reliquiæ e corpore exterminentur, "sanguis igitur, si vires adhuc constent, "convalescente jam ægro detrahendus est."

This practice is now very generally abandoned, unless symptoms demanding blood-letting supervene. It was not however the mere offspring of hypothesis. The small-pox, like some of the other exanthemata, it

* Monita et Præcepta Medica cum Notis Wintringhami.

was observed above, often leaves behind it a predisposition to inflammatory complaints; but it is sufficient to have recourse to blood-letting when the presence of these renders it necessary. The reader may consult what was said in the first volume, of blood-letting during the apyrexia of intermittents, which is altogether applicable to the case before us; in which indeed there is an additional argument for not letting blood till the symptoms we dread shew themselves; namely, that there is much less chance of their appearance, than of the recurrence of the paroxysm of an intermittent.

Local blood-letting by scarification of the temples or leeches, is a valuable remedy where the coma or inflammation of the eyes is considerable.

Although I had not arrived at the period of eruption when I had occasion to mention blood-letting, it appeared a more distinct plan to collect in one place the remarks to be made upon it, than repeatedly to mention it in speaking of the different stages of the disease. To return to the treatment of the eruptive fever.

Of

Of all the means employed for moderating the excitement during this fever, none has proved so generally beneficial as the application of cold. Sydenham* was the first who in this country introduced the cool regimen in small-pox. It is one of his greatest improvements in medicine. The injury done by a high temperature, and the advantage of a free admission of cool air, in continued fever, have been pointed out. Both are still more remarkable in the treatment of small-pox. There is perhaps no other disease in which cold is now applied so freely and with so much advantage.

This practice has been long known in the East; it is only in late times however that it has been introduced into Europe, for even the authority of Sydenham could not for a long time render the cool regimen in the small-pox prevalent. In this country it is now practised to a greater extent than he ventured to recommend.

The patient is at no period of the disease

* See his chapters De Variol. Regular. An. 1667, 1668, 1669; and De Variol. Anomal. An. 1670, 1671, 1672.

confined

confined to the house, whatever be the season, unless the fever be such as confines him to bed. When an exacerbation comes on he is taken to a cooler place, which generally relieves it. It is proper to keep his bed-room cool. For this purpose it will often be necessary to exclude the light as much as possible, and to promote a free circulation of air; and, as Tissot recommends, frequently to sprinkle the walls and floor with water.*

The patient should lie with few bed-clothes and on a mattress; a feather bed always occasioning too great an accumulation of heat. A crouded room is particularly hurtful, the heat thus occasioned being the most pernicious of any. A free use of cold drink is equally grateful and salutary.

It is almost unnecessary to observe, that our directions respecting the temperature must be regulated by the state of the weather, and the severity of the symptoms. The free admission of the external air will

* See what was said of diminishing the temperature of the patient's bed-room, in the treatment of continued fever.

be

be more necessary in warm than in cold weather; when the excitement runs high than when it is moderate. The temperature should always be such that the patient may experience no disagreeable degree of heat, but rather a sensation of cold; except indeed he complains of being cold we need not be afraid of carrying the cool regimen too far.

There is no part of this regimen more beneficial than frequently changing the linen of the sick, which should be dry but cool. The patient should be shifted at least twice a day.

There can be no doubt however, that the cool regimen, like every other mode of treatment, may be pushed too far. Dr. Makittrick Adair,* in a Letter to Dr. Duncan, makes some observations on the Suttonian plan of treatment; that is, the very low diet and free exposure to cold; and alledges that it often does harm, especially when carried so far as entirely to prevent the eruption. This however rarely happens,

* See the 8th vol. of the Medical Commentaries.

and

and although Dr. Adair's observations certainly demand attention, on comparing them with those of other writers, as well as with what we every day see in practice, it will appear that he endeavours to restrict us too much in the employment of the cool regimen.

Such are the means to be employed in the eruptive fever of the distinct small-pox. And many have advised us to continue the exhibition of cathartics and the cool regimen in its full extent after the eruption is finished, and even in cases where the fever has almost or wholly disappeared. But if our view in the employment of these means, is to moderate excitement, of what service can they be when the excitement has returned to the healthy degree? The truth is that in such cases a perseverance in these measures is found to do harm. "After the "eruption," Dr. Cullen observes, "when a "few pimples have appeared on the face, "the continuing the application of cold air, "and the employment of purgatives, have "indeed been the practice of many inocula-"tors; but I think these practices cannot "be

" be said to give any particular advantages " to inoculation ; for when the state of the " eruption is determined, when the number " of pustules is very small, and the fever " has entirely ceased, I hold the safety of " the disease to be absolutely ascertained, " and the farther use of remedies superflu- " ous. In such cases I judge the use of " purgatives to be not only unnecessary, but " that they may be often hurtful."

At the same time we must be careful to avoid the opposite and more dangerous extreme of relaxing too suddenly in the employment of the cool regimen, which has often been attended with alarming consequences.* The use of gentle laxatives, as far as is necessary to prevent costiveness, is to be continued ; and with regard to the application of cold, it should at this period be regulated by the patient's feelings.

If on the other hand the febrile symptoms

* A very striking instance of the injury done by an unguarded relaxation of the cold regimen is related by Mr. Perkins, in the 3d vol. of the Medical Observations and Inquiries.

continue

continue considerable, notwithstanding the appearance of the eruption the plan of treatment must not be relaxed. The continued use of cathartics and the cool regimen is then necessary; and as at an early period they are the best means of moderating the eruptive fever, they are now the most effectual for preventing the appearance of the secondary; which is always to be feared where the remission on the completion of the eruption is inconsiderable. The Indians, Dr. Rush informs us, plunge themselves in cold water as soon as they perceive the eruption of small-pox; which is found to moderate the disease. Cold bathing in the small-pox is also practised by Europeans in sultry climates. A person who had spent many years in the East Indies informed me, that when the pustules have a flaccidun favorable appearance, on the use of the cold bath they become in the space of a few minutes well filled and more prominent. If it be improper to persevere in the liberal use of cathartics when the appearance of the eruption has nearly or altogether removed the febrile symptoms, what

what shall we say of this practice after every symptom of the complaint has disappeared? "After having conducted patients through the small-pox," Dr. Brocklesby * observes, "physicians have generally "supposed purgatives necessary, in order "as they say to carry off the dregs of "this disease. I must own I have been so "far from placing confidence in the supposed advantage of this practice, that I "have been convinced that it tends too "much to weaken the body, already relaxed and broken by the preceding disease."

Notwithstanding what is here said, this practice is not wholly unfounded, but rests on the same foundation with that of bloodletting at the same period; and, when carried to the extent that some have recommended, is nearly as objectionable. But as the small-pox leaves behind it a predisposition to inflammatory complaints, it is of great consequence for some time after this disease to guard against any accumulation

* See his work on the Diseases of the Army.

of

of irritating matter in the bowels, which may be the means of inducing such complaints, as I have known it to be, and the patient thus nearly destroyed by an inflammation of the intestines.

There is for the most part some foundation for modes of practice which have been generally prevalent; and we should be cautious in wholly abandoning them. It will often be found that their pernicious effects are owing to physicians having lost sight of the circumstances which first suggested them. Guarding against the accumulation of irritating matter in the primæ viæ at this period must have always been found useful; but when physicians began to talk of draining off the dregs of the disease, and employed the same practice in all cases, we cannot be surprised that it was often hurtful.

When the fever continues after the eruption, we must expect a considerable exacerbation about the seventh or eighth day. Means for moderating the febrile symptoms are therefore particularly necessary at this period.

Blisters have been thought useful, and some

some have advised a succession of them for some days after this exacerbation; that is, after the commencement of the secondary fever. Blistering is certainly prejudicial when the synocha runs high, by increasing the excitement, which is admitted by Tissot, who is a strong advocate for their exhibition after the typhus has appeared. Blisters, like opium, he observes, recruit the strength, check the diarrhœa and determine to the surface. It will be found however on comparing different writers, that the observations made on blistering when considering the treatment of synochus are applicable to all idiopathic fevers.*

Except when local affections are present little is to be expected from them. I shall have occasion to speak of their use in considering the treatment of certain symptoms which do not come under the general plan of cure. When blisters are used, the proper place for their application is to be chosen,

* See the observations of Dr. Browne Langrish on Blisters in his Treatise on the Small-pox.

without regard to its being covered with pustules.

Although, where coma is not considerable, the sleep is often much disturbed, opiates are a doubtful remedy, particularly in the eruptive fever, and at other periods, if the excitement is considerable. Some also dread their tendency to induce coma.

Paracelsus was the first who gave opium to a considerable extent in the small-pox; and Sydenham, although he neglected the general plan of treatment adopted by Paracelsus and his followers, considered opium a valuable medicine in this disease. Some late writers defend this practice; while others go so far to the opposite extreme as to condemn the use of opium in almost every case of small-pox.

The result of all that has been said on the subject appears to be, that if opium be given when the excitement or coma is considerable, or if it be found to induce coma, it is hurtful; but in all other cases, especially where the watchfulness is obstinate, a quantity sufficient to allay restlessness, provided proper care be taken to prevent

prevent its constipating effects, is beneficial.

Opium, upon the whole, is better adapted to the confluent than distinct forms of the disease. Burserius frequently employed it to relieve the acute pains of the back and limbs which frequently attend the former. The reader will find some good observations on the use of opium in the small-pox, in Tissot's Letter to Haller on this disease.

Although the eruptive fever in the distinct small-pox is always a synocha; yet towards the end of the disease, if the fever has continued after the eruption, and especially if the secondary fever has supervened, a greater or less degree of typhus always shews itself; and then the mode of treatment is the same as in typhus from other causes.

2. Of the Treatment of Confluent Small-pox.

The more alarming the eruptive fever is, the more assiduous must be our attention to every part of the cool regimen. On this

head there is little to be added to what has already been said.

It cannot be denied that an alarming train of symptoms have sometimes been induced by sudden and imprudent exposure to cold. The eruption recedes, the patient falls into syncope* or convulsions which sometimes terminate fatally; and it is in the confluent forms of the disease that this accident is most to be dreaded; and there, it appears from the observations of authors, chiefly at the time of maturation. It will be found however on reviewing the history of such cases, that previous to the exposure to cold the patient had generally been debilitated by the hot regimen, or other improper modes of practice. When the disease has been properly treated from the commencement, such a train of symptoms is a very rare occurrence.

Instances of this kind ought not to deter us from the cautious application of cold even where the hot regimen has been employed at an early period. The immediate

* See the observations of Dr. Dimsdale and others.

and

and sudden application of cool air has often snatched the patient from death.* Caution however is requisite.

There is but one form of small-pox in which the good effects of the cool regimen have been called in question, namely, the crystalline. Dr. Rogers of Cork, who had extensive opportunities of treating this form of the disease, declares that he has not there found the cool regimen produce its usual good effects.†

In the confluent small-pox, where the fever is always considerable, every kind of irritation or exertion is injurious. The patient should neither attempt to walk about nor even sit up, as in the milder forms of the disease; and all the directions respecting the management of the natural agents laid down in the treatment of synocha, are to be strictly followed.

No part of the treatment of confluent

* See the observations of Sydenham, and Sir George Baker in his Treatise on this disease.

† It is unnecessary to make a separate division for the few observations which apply exclusively to the anomalous small-pox.

small-pox demands more attention than the employment of cathartics. Whatever opinion we might form of them, where the excitement is above the healthy degree; we should, a priori, in all cases where it falls below this degree, be inclined to dissuade from their exhibition, except as far as it was necessary to prevent costiveness. A very extensive experience however has contradicted this inference.

Practitioners were first led to recommend catharsis in confluent small-pox from having observed that when a spontaneous diarrhœa occurred, especially if it appeared early in the disease, the pustules were less numerous, the fever more moderate, and the swelling of the head less considerable. "A spontaneous diarrhœa," Dr. Cleghorn observes,* "often occurred with the best "effects, particularly moderating the symp- "toms of the eruptive fever; from whence "we learn," he adds, "how reasonable it "is to give purgatives in this stage of the "disease according to the rules laid down

* Account of the Diseases of Minorca.

by

" by Drs. Friend and Mead." " If an ap-
" prehension," says Dr. Walker,* " of
" weakening the vital powers in this species
" of small-pox," viz. the putrid, " when
" neither diarrhœa nor any other apparent
" evacuation occurs, excepting what is dis-
" charged by the salivary glands, induce us
" to suspend purging altogether or even de-
" lay it long, the prognosis, in every case
" of this sort, must be desperate." In another place the same author observes, " Purging is much more necessary in the " confluent than in the distinct small-pox." " But farther," says Huxham,† " if nature " neither by her own effort, nor the help " of art, is capable of keeping the morbific " humor from falling on the more vital " parts, but from an unfortunate translation " of it is like to sink under its weight; as " upon a sudden retrocession of the humor " of the face and hands, a premature sup-
" pression of the saliva, and the like; doth
" it not seem necessary to carry off the of-

* Treatise on Small-pox.
† Treatise on Fevers, Small-pox, &c.

" fending matter by some other out-let, as " particularly by the guts, which are much " more easily and certainly solicited to dis- " charge than the pores of the skin, the " urinary passages or the salivary ducts." The reader will find cases to prove the benefit of purging in the confluent small-pox in Dr. Walker's Treatise just alluded to, and in a Treatise by Dr. Friend entitled " De Purgantibus in Secunda Variolarum " confluentium Febre adhibendis." " Vides " ut aliis," Dr. Friend remarking on these " cases observes, " inopinatam præsentis- " simamque opem attulerit purgatio; ut " aliis paulisper subvenerit cunctatius per " vices repetita."*

It is observed that the good effects of purging are not so soon observed where the

* Dr. Friend even relates one case, in which the gangrenous blisters mentioned by Sydenham, and which he always found a fatal symptom, appeared; which treated with mild cathartics terminated favorably. There are some good observations on purging in small-pox by Dr. Simson, Professor of Medicine at St. Andrew's. In the works of Hoffman, Mead, and Wintringham, this practice is also warmly recommended.

excitement

excitement is considerable, and that in these instances their frequent repetition is most necessary.

Upon the whole it appears, that cathartics are useful at all periods of small-pox, and particularly during the eruptive fever, and at the time the secondary fever is expected, unless a diarrhœa has supervened; and that they are the more indispensable the more severe the disease. They are necessary when the typhus shews itself, still more when the excitement is considerable.

Two circumstances in their exhibition always demand attention: that the mildest cathartics are the best, drastic purgatives being only necessary where there is an unusual difficulty in moving the bowels; and that wherever there is much debility we must during their employment support the strength by cordials. If this caution be neglected, particularly in the worst forms of the disease, the danger may rather be increased than diminished by cathartics.

It is the opinion of some that purging has been carried too far by many practitioners, particularly in the secondary fever.

If

If we find the patient's strength sinking, notwithstanding the use of cordials and tonic medicines, it is necessary to discontinue the cathartics or to employ only gently cathartic clysters.

To what the benefit derived from cathartics in the small-pox is to be attributed, has not yet been determined. With regard to the hypothesis of the variolous matter being discharged in this way, to the confinement of which the danger of the small-pox has been attributed, it deserves little attention. Nor can it well be supposed that the advantages derived from purging, are to be altogether attributed to its expelling irritating matter which is apt to accumulate in the intestines in this disease. If future observation should determine this to be the only use of cathartics in the small-pox, it will considerably modify the treatment; at present we have reason to believe that they are serviceable in some other way.

It has long been a practice in eastern countries, and it is recommended by some late European writers, Tissot, Burserius, and others, to discharge the matter of the pustules

pustules by piercing them with fine needles, which occasions a copious secretion by the skin, for the pustules soon fill again, and are again opened, which is always done by making a very small aperture.* By this means it is thought the accession of the secondary fever is often prevented.

There is certainly a striking analogy between the prevention of the secondary fever in this way and by the use of cathartics, there being much similarity between the office of the skin and that of the intestines; but how an increased secretion either by the one or the other, acts in preventing the secondary fever, it is impossible to say; it is in vain to attribute their action to the evacuation of variolous matter, which has no existence till it is formed in the skin.

In the confluent as in the distinct small-pox emetics are useful at the commencement. They are also recommended about the seventh or eighth day if the strength is not much impaired, and seem often to mo-

* It has been considered as dangerous to admit air into their cavities.

derate

derate the symptoms of the secondary fever. They are particularly indicated when the stomach is loaded. Less however is then to be expected from them, than at an earlier period; and if any degree of typhus has shewn itself, they are generally hurtful.

Such are the observations which apply to the treatment of confluent small-pox in general. What remains to be said may be divided into the treatment peculiar to the confluent small-pox, while attended by synocha; and that peculiar to the worst forms of the disease, in which a confluent eruption is attended with typhus.

On the former of these heads little remains to be said. While the fever is a synocha, the treatment of the confluent small-pox differs from that of the distinct in little more than degree. The means pointed out in the treatment of distinct small-pox are to be proportioned to the violence of the excitement.

It is to the confluent small-pox attended with synocha that nauseating doses of emetics are best adapted, and here they often form the best cathartics we can employ. In the

the distinct small-pox they are too severe a remedy, and in the confluent attended with typhus they are too debilitating.

More harm may be done by incautious blood-letting in the confluent, than in the distinct, small-pox, and it is more difficult to determine when it should be employed. The confluent small-pox often shews a tendency to visceral inflammations, and the fever itself at an early period is often characterised by great excitement, accompanied with violent pains of the back, breast, and head; so that an inexperienced practitioner would judge very copious evacuation necessary. One acquainted with the disease however would recollect, that these symptoms are the forerunners of a confluent eruption, which is sooner or later attended with typhus, which will very suddenly supervene if debilitating measures are pushed far.

The pernicious effects of such measures, which at first seem to promise much, are soon apparent. The pustules assume a more unfavorable character, black spots often appear on them, and the patient sinks under

under that train of symptoms which has been termed putrescent, enumerated in the preceding volume. The reader will find these observations illustrated in a striking manner, in Dr. Cleghorn's Account of a Malignant Small-pox which raged in Minorca.

With respect to the treatment peculiar to cases in which typhus has supervened, almost all that was said of the treatment of typhus, properly so called, is applicable here. The typhus may either, as in the worst cases, shew itself in the eruptive, or what is more common, sooner or later in the secondary, fever. In the regular small-pox, typhus never precedes a distinct eruption, nor is such an eruption often followed by any considerable degree of this fever. In anomalous cases, it often precedes, and more frequently follows a distinct eruption; and to such cases the observations about to be made are as applicable as to the confluent forms of the regular small-pox. It is only necessary indeed to make these observations, in order to shew that the treatment of idiopathic typhus is still the same.

The

The earlier the typhus shews itself the greater is the danger, and the more assiduous therefore we ought to be in the exhibition of proper remedies. The diet, instead of being refrigerant and diluent, must here be stimulating and as nourishing as the state of the stomach admits of. Wine we still find the article on which experience teaches us to rely. It must be given alone or diluted according to the urgency of the symptoms, always in sufficient quantity to increase the strength and fullness of the pulse and to remove or diminish the delirium; for such in all cases of idiopathic typhus are the effects of wine; and except in extreme cases, where the digestive powers are wholly suspended, these effects are increased by the addition of some farinaceous matter properly prepared.*

It was observed in detailing the symptoms of typhus that the delirium is sometimes, though rarely, of the furious kind. It appeared however, that notwithstanding the

* See the observations on diet in typhus in the first volume.

presence

presence of this species of delirium, wine was the most successful remedy. "There "is something very singular and deceitful "in the common typhus," Dr. Walker* observes, "in which the patient in the "most violent delirium, tossing about his "arms, speaking loud, and shewing every "instance of the greatest vigour, with a "galloping hard pulse, shall be instantly "composed and his pulse at the same time "brought down, upon getting him to swal-"low a draught of wine; when therefore "small-pox is complicated with a disease of "this kind, it always produces a dangerous "complaint, requiring as much light sup-"port as the patient can receive, and wine "to be given frequently, not only when he "is in a low and depressed state, but when "high and the delirium fierce."

Dr. Walker relates a case which shews in a striking manner the similarity of the effects of opium and wine in such fevers. They are not however to be used indiscriminately, as appears from the observations

* See his Treatise on Small-pox.

made

made on their exhibition in typhus; from which and what was said of the use of opium in the distinct small-pox, the reader will readily perceive when and how this medicine is to be employed in the various forms of the disease.

The advantage of conjoining with wine the Peruvian bark in confluent small-pox, is generally acknowledged. Morton was among the earliest practitioners who employed the bark in the confluent small-pox. Succeeding practitioners adopted the practice, but the late Dr. Alexander Monro was the first who gave it freely in this complaint. It is now employed with the same freedom as in common typhus.

By the use of the bark, Dr. Monro observes, empty vesicles were filled with matter; watery sanies changed into white, thick pus; while petechiæ became paler and at last disappeared.

Whatever restores vigour, changes at the same time the state of the matter, from which in most cases the prognosis may with great certainty be collected.

In many cases other astringents are em-

ployed with advantage. Alum mixed with Peruvian bark, Vogel * observes, is the best of all medicines when the pustules are bloody. Dr. Wall † also insists on the advantage of alum in such cases. The sulphuric acid ‡ has also been celebrated in the confluent small-pox. Its acidity as well as astringency may be useful.

Acids § of all kinds have been much employed in this form of the disease. Dr. William Wright ‖ particularly recommends a mixture of vegetable acids and common salt in all those diseases called putrid.

The various medicines which have been termed tonic and antispasmodic have been occasionally employed. On the use of these

* Prælect. Acad. &c.

† Philosophical Transactions, No. 484, §. 4.

‡ Dr. Brocklesby mentions an instance in which recovery seemed owing to the exhibition of large doses of this acid. The patient took no less than an ounce of the acid. vit. ten. daily.

§ I am induced by long and repeated experience, says Tissot, to regard mineral acids as the most valuable remedy we have in the small-pox.

‖ See Dr. Wright's Letter to Dr. Morgan.

there

there is nothing to be added to what was said of them when speaking of typhus, except what comes under that part of the treatment in small-pox which still remains to be considered: the means to be employed when certain symptoms shew themselves, the treatment of which does not come under the general plan of cure.

These I shall consider the more at length, as the same observations apply to the other exanthemata when similar symptoms appear in them.

Inflammation of the brain is a more frequent accident in the crystalline, than in other forms of small-pox. When the patient complains of an acute pain of the head, or is attacked with delirium; when the eyes are inflamed, and incapable of bearing the light, the carotid and temporal arteries beating strongly while the pulse at the wrist is small and feeble, we have reason to dread an inflammation of the brain; and it unfortunately often happens in such cases, that the patient is too weak to bear much general blood-letting. Local blood-letting therefore by scarification of the tem-

ples, or leeches, is what we chiefly trust to.

If general blood-letting be deemed admissible, the jugular should be opened in preference to any other vein, by which the general, serving at the same time the purpose of local, blood-letting, the symptoms will be relieved without pushing the evacuation so far as would otherwise be necessary.

Blisters applied to the head also make an essential part of the treatment. If the excitement be such as to warrant general blood-letting, the blister should be delayed till after the blood-letting.

Few remedies, we shall find, are better calculated to relieve inflammatory affections of the head, than a discharge by the intestines, and no cause more apt to increase such affections, than any accumulation of irritating matter there. Gentle cathartics therefore are doubly necessary, where any tendency to inflammation in the head appears.

For a similar reason, fomentation of the lower extremities is useful. "In some ca-

"ses,"

ses," Dr. Walker observes, "where the "delirium was obstinate, and there was "reason to suspect too great a determina- "tion of blood to the head, which is com- "monly the case,..... I have found singu- "lar relief obtained, by a succession of "flannel clothes dipped in hot water, very "well wrung out, and applied to the legs, "and continued for half an hour or more at "a time." Other writers make similar observations.

Inflammation is also apt to seize on other parts, particularly the lungs, occasioning much difficulty of breathing and cough. Here the same means must be had recourse to, the local remedies being applied to the chest instead of the head. But the treatment in such cases cannot be properly understood without being acquainted with the phlegmasiæ, which will form the subject of the two succeeding volumes.

Dyspnœa often supervenes in small-pox from other causes, a pustulary affection of the larynx, trachea, and larger branches of the bronchiæ, or an unusual degree of swelling in the fauces which also impedes deglu-

tition. In such cases, large blisters applied as near the part affected as possible are the most successful remedy. The same may be said of difficulty of deglutition in consequence of the viscidity of the saliva.

In this case gargles, such as those recommended in the aphthæ infantum, must at the same time be employed. Huxham * recommends cyder and honey—or vinegar, water, and honey—or oxymel scilliticum with a little nitre or crude sal ammoniac. Bang recommends a gargle of oxymel of squills and water, and the application of sinapisms to the hands and feet, with gentle laxatives, and if the difficulty of breathing be great, the antimonium tartarisatum. Dr. Brocklesby observes, that small doses of ipecacuanha tend to restore the salivation when it is either suppressed or too viscid, and to alleviate the dyspnœa which often attends this accident. When the state of the fever admits of full vomiting, it is often the means of relieving the swelling of the fauces and promoting the secretion of sa-

* On Fevers, Small-pox, &c.

liva.

liva.* The dyspnœa which sometimes follows the sudden interruption of the salivation, seems frequently owing to a degree of pneumonia supervening.

In all these cases, when blisters and the other means which have been mentioned fail to bring relief, we must have recourse to local blood-letting, and in the last case general blood-letting is sometimes necessary. On the other hand, the salivation is sometimes so copious as to threaten suffocation from the fluid falling constantly into the trachea, especially where there is any degree of coma. In this case Vogel thinks cathartics the most successful remedy.

Profuse diarrhœa is a troublesome symptom in the confluent small-pox, particularly in children. Unless this symptom produces a dangerous degree of debility, we must be cautious how we endeavour to check it;

* Dr. Cameron dissuades from vomiting in this case, and alledges that it has sometimes occasioned suffocation. He strongly recommends breathing the steam of a decoction of marshmallows, myrrh, and honey in vinegar and water. See the 22d vol. of the Gentleman's Magazine.

and even when it does occasion much debility, the safest plan is to endeavour to moderate the discharge by tonic medicines. There is perhaps no instance, except towards the termination of the complaint, in which the diarrhœa can be safely stopped by opiates and astringents, and then it is to be done cautiously; and when these medicines produce too sudden an effect, it must be counteracted by gentle laxatives; the diarrhœa is sometimes, though rarely, rendered profuse by exposure to cold; some relaxation in the cold regimen is then proper.

Obstinate vomiting is a dangerous symptom, both by reducing the strength, and preventing the exhibition of medicines. If from the nature of what is evacuated, the vomiting appears to proceed from irritating matter collected in the stomach, we must in the first place by draughts of some diluting liquor, enable the stomach to free itself of its contents. If they are bilious or acid, we must correct what may remain by acids or absorbents.

If the vomiting proceeds rather from the state

state of the stomach itself than its contents, which may be known by the inoffensiveness of the matter rejected, we must have recourse to such medicines as tend to allay the tendency to contraction. Few are more powerful than saline draughts given in a state of effervescence. If these fail, a few grains of camphire may succeed, or a dose of solid opium, or, what is perhaps the most powerful means we possess in obstinate vomiting, a combination of the two last medicines. The extract of cascarilla given in some agreeable distilled water is often serviceable in allaying vomiting.*

The sweating is sometimes so profuse as considerably to reduce the strength. In the worst forms of the disease however, and in infants in any form of it, this symptom rarely appears, so that its excess is less to be dreaded. When it shews a tendency to become profuse, the patient should avoid being in bed in the day time, which, with the cool regimen and laxative plan, almost

* See Vogel's Obs. on the treatment of Measles in his Prælect. Acad.

always

always sufficiently counteracts this tendency.

A suppression of urine sometimes comes on, particularly in the confluent and anomalous forms of the disease, and in some cases proves obstinate. People in the vigour of life, and particularly those accustomed to a free use of spirituous liquors, are most liable to this symptom. It seems generally to arise from neglecting evacuations at the commencement of the disease, or keeping the patient too warm.

If, as frequently happens, it be attended with costiveness, we must begin with an emollient and laxative clyster. When the hot regimen has been employed, Sydenham advises the patient to be supported by two assistants, and exposed in his shirt to a current of cool air. The same practice is recommended by Bang* and others. Dr. Cameron of Worcester observes, in the 22d vol. of the Gentleman's Magazine, "To facilitate "the discharge of urine which is often diffi- "cult in the small-pox, Sydenham directs

* Praxis Med. Systematice Exposita.

"us

"us to get the patients up and lead them "about the room, but I would beg all "young physicians to read Hoffman's Dis- "sertation, De Situ erecto, in Morbis peri- "culosis valde noxio, before they either ad- "vise or allow of this practice. I have "known sudden and fatal effects from it in "very hopeful cases. I think there is no need "to make so hazardous an experiment while "salt of amber is to be had, for that will "seldom fail to answer this intention." The former part of this observation however is chiefly, if not wholly, applicable when the debility is considerable, Where there is much excitement, the case in which suppression of urine most frequently happens, although it may be proper in the first place to try the salt of amber, there is little hazard in adopting Sydenham's plan; and where the increase of temperature is steady and there is no moisture on the skin, if this plan fails it may be proper to dash cold water on the legs, as is sometimes practised to solicit the alvine discharge.

One or two epileptic fits, it was observed above, even in the mildest forms of the disease

disease, frequently precede the eruption without being attended by danger. In the confluent and anomalous forms of the disease however, the fits are more frequent, and in proportion to their frequency more to be dreaded. This symptom is rare in adults, but in them it is most dangerous.

When from the nature of the disease, we have reason to dread the frequent recurrence of epileptic fits, or when they have repeatedly occurred in any form of the disease, we must endeavour to moderate their violence and prevent their return. Blood-letting was at one time very generally employed for this purpose, but practitioners now agree that it is seldom successful; and the operation of blisters, Dr. Cullen observes, comes too late.

As the violence and frequent repetition of the fits generally depend on the violence of the primary disease, the various means of moderating this, are among the best for moderating and preventing the fits. But of all the medicines which have been employed, none have been found so frequently successful as opium, on which Dr. Cullen chiefly depends

depends, and advises us to throw it in per anum while the fit lasts.

Opium is not only useful as an antispasmodic, but also by promoting perspiration, one of the best means, it has been found, to prevent the return of the fit. Dr. Walker recommends for this purpose a preparation similar to the compound powder of ipecacuanha. Vogel with the same view recommends a mixture of cinnabar, the sulphur auratum antimonii, and musk. The last is also recommended by Dr. Brocklesby and Bang, who likewise employed some other of the medicines termed antispasmodic. There are none of these however much to be relied on. Cataplasms applied to the extremities are sometimes serviceable. Whatever other means are employed, gentle laxatives are not to be neglected, as the irritation of retained fæces might alone be capable of renewing the fits, especially in children.

The pustulary affection of the eyes is often very troublesome, and is sometimes followed by loss of sight. When the pustules are numerous on the face, the use of common

mild and gently astringent collyria should never be neglected. M. De Lassone * recommends frequently wetting the eyes and eye-lids with rose-water, in order to prevent the appearance of pustules; or, if they have appeared, to diminish inflammation. Burserius recommends water, in which ignited iron has been quenched.

It is of great consequence to prevent the eye-lids from growing together, which, as Vogel observes, is often the source of all the mischief, increasing the pustulary affection and preventing the use of collyria. This accident may in general be easily prevented, by bathing the eyes from time to time with warm milk.

When the load of pustules on the face is very great, so that there is reason to think the eyes in danger, it has been recommended to immerse the extremities in warm water, and apply sinapisms to them, or even to scarify them. † Vogel condemns the

* See Memoire sur quelques Moyens de remedier aux accidents graves dans les Petites Veroles, in the 3d vol. of the Histoire de la Société Royale de Médecine.

† Vogel De Cog. et Cur. Morb.

common

common practice of moistening the face with a view to prevent or moderate the eruption there. When pustules have actually appeared on the eyes, we must have recourse to emollient poultices and mild mucilaginous decoctions; * and fomentations are useful when there is much swelling of the eye-lids.

It has been observed above, that in small-pox, as in other eruptive fevers, a retrocession of the eruption sometimes happens, attended with an alarming train of symptoms.

The means to be employed in such cases are in some measure influenced by the causes which produce the retrocession. The chief of these causes are, the sudden application of cold when the hot regimen has been employed, particularly if the cold be applied about the time of maturation and when the patient is much debilitated; fatigue, from remaining too long out of bed or in the erect posture; syncope; strong affec-

* See the observations of Burserius and Tissot.

tions

tions of the mind, particularly terror or grief; and above all, profuse evacuations.

The remedies of most general application in such cases are wine and opium. These, Rosen observes, are particularly indicated when the retrocession is the consequence of profuse evacuations. When it is the consequence of the sudden application of cold, increasing the temperature and even the warm bath are generally of service, and the application of sinapisms and blisters in this case is particularly recommended. Musk and camphire, as in other cases of repelled eruption, are very generally employed. Vogel thinks the ammonia, the semicupium, and blisters applied to the feet, the most successful remedies. If, as sometimes happens, a diarrhœa supervenes on the retrocession of the eruption, it is generally of service and should not be checked. Some have recommended blood-letting on the sudden retrocession of the eruption. But if, as Burserius justly observes, whatever debilitates tends to occasion this accident, blood-letting is surely the last means we

we should think of employing in such a case.*

When the swelling of the face subsides, especially if it subside suddenly, and is not followed by the swelling of the hands, Dr. Brocklesby recommends the application of blisters to the wrists and fore arms, which often excites the swelling of the hands, or if not, tends to obviate any consequences to be feared from its absence. When towards the period of maturation there is reason from the debilitated state of the system to apprehend that the swelling of the face may suddenly subside, Dr. Cameron, in a paper just alluded to, recommends the following plan, to which the author's extensive experience naturally calls our attention. "On the day before the "face is expected to sink," he observes, "I wrap up the arms and legs lightly in a "suppurating cerate; the citrine, for in-

* The reader who has sufficient knowledge of medicine to separate facts from theory, will find some excellent observations on blood-letting in this case, in Dr. Cameron's Paper in the 22d vol. of the Gentleman's Magazine.

" stance, spread on linen rollers and tacked " together so as to make one contiguous " plaister."....." I assure you, I have " known adults in the confluent small-pox " in less than an hour after the application " of these plaisters, cry out with joy that " they were in heaven. I have seen the pus- " tules as far as the plaisters reached, ripen " and fill even to bursting with laudable " pus, and this dangerous period pass with- " out one alarming symptom." About the same period the whole body has been anointed with mercurial ointment apparently with good effects.

Dr. Brocklesby also recommends blistering the wrists when the salivation suddenly ceases without any swelling of the hands.

When the swelling of the face and neck is excessive, bathing the lower extremities and applying sinapisms to them, often relieves it. For the same purpose Tissot recommends the warm bath.

When the eruption, Vogel observes, is delayed beyond the usual time, a single venesection, a dose of laudanum, or the tepid bath, seem frequently to promote its appearance.

pearance. Of these means, opiates only are admissible when the fever is typhus. Although, as was observed above, the eruption is generally earlier in the confluent, than in the distinct, small-pox, yet in some cases it is much later.

When the pustules are longer of drying than usual, they should be opened; and if the dried pustules adhere too long, fomentations are the best means to make them separate.

When the patient is plethoric we may let blood with a view to stop hemorrhagies; in other cases we must trust chiefly to astringents.* The serum lactis aluminosum has been particularly recommended, especially if the hemorrhagy be from the skin, tinging the matter of the pustules.†

When pustules appear in the nares and fauces, Tissot recommends washing them

* See Burserius's Inst. Med. Pract. The various means both local and general to be employed in hemorrhagy will be considered in another part of the Treatise.

† See the foregoing observations on the use of alum and the bark.

frequently by means of injections. This means is preferable to gargling, as the motion of the throat in gargling is apt to increase the pustulary affection of the fauces.

We have been advised to open the tumors, which sometimes appear after the small-pox, if they have suppurated; if not, to apply poultices to promote the suppuration. The propriety of this mode of practice, particularly in scrophulous habits, is doubtful. When the sore does not heal readily, the Peruvian bark is serviceable, provided there be no tendency to visceral inflammation.

When the inflammation of the inoculated part becomes troublesome, the remedies are the same as in cow-pox.* Dr. Rush recommends washing the part repeatedly with cold water, which never fails, he observes, to remove the inflammation.

When the pustules, it was observed above, have adhered for a longer time, and been filled with a matter less thick and be-

* See what was said of moderating the inflammation of the inoculated part when speaking of cow-pox.

nign

nign than usual, after they fall, the parts which they occupied suffer a desquamation, and pits are formed. Various means have been proposed to prevent this consequence. Such attempts however do not seem to have answered the expectations of those who proposed them.

It is a prevalent opinion that exposure to the air is the cause of pitting from its not happening to parts which are covered. It has therefore been proposed to cover the face with something that shall exclude the air. The reader will find an account of this method, and arguments for having recourse to it, in Dr. Walker's Treatise on the Small-pox. It would require an extensive experience to determine its success, as pits are not always the consequence of even a numerous eruption. Our faith in it is lessened by reflecting that the hands are often as much exposed to the air as the face, and that there is something in the disease which determines it to affect the face in preference to other parts. The pustules and swelling always appear first on the superior parts of the body, and the former

are there most numerous, and in the more severe forms of the disease, of a less benign appearance. Besides, children have been born marked with the small-pox.

Other means have been proposed for preserving the face,* but it is needless to give any account of them, since none have been found such, as would encourage us to recommend them. The best means to prevent pitting are inoculation and the cool regimen.

CHAP. II.

Of the Chicken-pox.

THE Chicken-pox is so mild a disease that it hardly ever requires the assistance of the physician. It is necessary however to be acquainted with it, that it may not be confounded with diseases of more importance.

It is readily distinguished from all other eruptive fevers, except the small-pox, for

* See a paper by Detharding in the 5th vol. of Haller's Disp. ad Hist. et Cur. Morb. Pertinent.

which

which there is reason to believe it is sometimes mistaken. A very little attention however enables us to distinguish the two complaints.

SECT. I.

Of the Symptoms of Chicken-pox.

THE Chicken-pox, or, as it is termed by medical writers, Varicella, is defined by Dr. Cullen,

"Synocha, papulæ post brevem febriculam "erumpentes, in pustulas variolæ similes, sed "vix in suppurationem euntes, post paucos "dies in squamulas, nulla cicatrice relicta, "desinentes."

In all, even the mildest, cases of small-pox, the complaint begins with more or less fever, on the third or fourth day of which the pustules appear. In the chicken-pox the eruption often appears without any previous sign of indisposition; In others, Dr. Heberden* remarks, the pocks are preceded

* The Med. Transactions, vol. i.

by a little degree of chilliness, lassitude, cough, broken sleep, wandering pains, loss of appetite, and feverishness for three days.

On the first day of the eruption the pustules are similar to those of the small-pox; on the second day there is formed on each a small bladder which contains sometimes a colourless, sometimes a yellowish, fluid; "on the second, or at farthest on the third, "day, from the beginning of the eruption, "as many of these pocks as are not broken "seem arrived at their full maturity, and "those which are fullest of that yellow li-"quor very much resemble what the ge-"nuine small-pox are on the fifth or sixth "day, especially where there happens to be "a larger space than ordinary occupied by "the extravasated serum."* It often happens however, either by the rubbing of the clothes, or the patient's scratching to allay the itchiness which attends this eruption, that the vesicles are broken on the first or second day of their appearance. When this happens, the pustules, previously more

* Dr. Heberden's Obs. Med. Trans. vol. i.

or

or less raised, subside, and the matter forms a crust without having at all assumed the appearance of pus. Even in those pustules which escape being broken, it has very little if any of this appearance. On the fifth day of the eruption all the pustules are dry and covered with crusts, which in the small-pox does not happen till the eighth or ninth day of the eruption, that is, the eleventh or twelfth of the disease. The pustules in chicken-pox are less inflamed and their size is sometimes less than those of small-pox, but in the latter respect there is generally little difference.

The chicken-pox is never confluent or very numerous. The greatest number which Dr. Heberden saw was about twelve on the face and 200 on the rest of the body. The eruption sometimes makes its first appearance on the back. When this happens, it affords another mark of distinction, the eruption of small-pox always first appearing about the face, neck, and breast.

The last circumstance mentioned in Dr. Cullen's definition "nulla cicatrice relicta," assists but little in forming the diagnosis, the

the milder kinds of small-pox being rarely followed by pitting, and pitting having sometimes though rarely been the consequence of chicken-pox.

Upon the whole then, the small-pox and chicken-pox differ, in the eruption of the former being preceded by a fever of a certain duration, while that of the latter is either preceded by none or one of uncertain duration; in the vesicles and succeeding scabs appearing much earlier in the chicken-pox than in the small-pox; in the matter of the former never acquiring the purulent appearance, which it always does in the distinct small-pox, the only form of the disease which can be confounded with chicken-pox. This diagnosis is more important than at first it appears, as it is of consequence to determine positively whether or not a person has had the small-pox.

With respect to the prognosis in chicken-pox, it is uniformly good, so that medical assistance being seldom necessary, practitioners are less acquainted with this, than most other eruptive fevers; and we have reason to believe that it has not only been mistaken

mistaken for small-pox, but that its matter has been used for that of small-pox in inoculation, to which we may ascribe many of the supposed cases of small-pox having appeared a second time in the same person.*

SECT. II.

Of the Causes of Chicken-pox.

ON this subject there is little to be said. The chicken-pox like other exanthemata arises from a specific contagion, which seems to produce the disease about the same

* Dr. Heberden thinks the swine-pox the same with the chicken-pox. See also the 1263d and 1264th paragraphs of Lobb's Practice of Physic.

Dr. Heberden describes another disease which he believes to be only a more severe species of chicken-pox. In this form of the disease, the symptoms of the eruptive fever are considerable and continue for three or four days before the eruption appears. Nor does the fever remit on the appearance of the eruption even where there are but few pustules. The pustules are redder than in the common chicken-pox, spread wider, but hardly rise so high, and instead of one little vesicle, they have from four to ten or twelve. In other respects they resemble the common chicken-pox.

period

period after infection with that of the small-pox. Dr. Heberden thinks that people are not liable to a second attack of chicken-pox. "I wetted a thread, he observes, in the "most concocted pus-like liquor of the "chicken-pox which I could find, and after "making a slight incision it was confined "on the arm of one who formerly had the "disease, the little wound healed up im-"mediately, and shewed no signs of any "infection."

SECT. III.

Of the Treatment of Chicken-pox.

THE treatment of chicken-pox is very simple, and differs in nothing from that of a gentle synocha. The mildness of the symptoms renders blood-letting and other powerful means unnecessary. Cooling saline cathartics in sufficient quantity to keep the body open, with a mild and diluent diet, form the principal part of the treatment. With respect to temperature and exercise, they should be regulated by the patient's feelings.

CHAP. III.

Of the Measles.

THE Measles, or, as it is termed by medical writers, Rubeola, Morbilli, or Febris Morbillosa, is defined by Dr. Cullen,

" Synocha contagiosa cum sternutatione " epiphora et tussi sicca rauca. Quarto die, " vel paulo serius erumpunt papulæ, exi- " guæ, confertæ, vix eminentes, et post " tres dies in squamulas furfuraceas minimas " abeuntes."

Dr. Cullen divides this disease into two species, the Rubeola Vulgaris, et Rubeola Variolides. The former he defines,

" Rubeola, papulis minimis confluentibus " corymbosis, vix eminentibus."

Under this species he ranks three varieties.

1. Rubeola Vulgaris, " Symptomatibus " gravioribus et decursu minus regulari."

2. Rubeola Vulgaris, " Comitante cy- " nanche."

3. Rubeola

3. Rubeola Vulgaris, " Comitante diathesi " putrida."

His second species, the Rubeola Variolides, he defines,

" Rubeola papulis discretis eminentibus."

Although he mentions this species in compliment to Sauvages, he does not regard it as properly belonging to measles. " Sauvagesium secutus, hunc morbum hic " indicavi, etsi multum dubito, an recte ad " rubeolam referendus est, non solum enim " forma pustularum plurimum differt, sed, " quod majoris momenti esse videtur, est " plerumque absque symptomatibus catarr- " halibus, rubeolæ adeo propriis."* Matthiew is of the same opinion, and observes, that this complaint is seldom met with unless the small-pox be prevalent at the same time with the measles.†

The following is the division of measles generally adopted by authors. It compre-

* See Dr. Cullen's Syn. Nosologiæ Meth. p. 136.

† See Matthiew's Observations on this species of Measles in the 47th and following pages of the 4th vol. of Baldinger's Sylloge Selectiorum Opusculorum.

hends

hends only the first species of Dr. Cullen, and is similar to his division of this species.

1. Rubeola Vulgaris or Morbilli Regulares, the measles such as they generally appear when their course is undisturbed by any unusual symptom.

2. Rubeola Anomala, Morbilli Anomali, Morbilli Epedemici,* or, the putrid measles, comprehending those forms of the disease in which the usual course is disturbed.

3. Rubeola Anginosa, in which the affection of the fauces makes a principal part of the disease.

The similarity of the measles and small-pox has induced Rhazes, Eller, and some other writers, to regard them as little more than varieties of the same complaint. The more nearly they resemble each other however, the more cautious we must be not to confound them, since the treatment in the two complaints in some respects differs very essentially.

In by far the majority of cases however. there is a well marked difference in the

* Morton, Huxham, &c.

symptoms

symptoms of the eruptive fever, and in all cases in the appearance of the eruption, at least after it has been out a day or two at most.

It was observed above, that when the symptoms of diseases run imperceptibly into each other, the same is true of the modes of practice suited to them. Thus we found that the symptoms of synocha imperceptibly run into those of typhus, and that between the modes of practice in these complaints, however opposite, no well marked line of distinction can be drawn. The same, it appeared, is the case with respect to intermitting and continued fever in general. The symptoms and treatment of the one run into those of the other. Did a perfect diagnosis between such cases exist, it would be useless. We may regard them as one complaint, and we feel no difficulty in suiting the practice to the symptoms. Should symptoms of increased excitement appear in typhus, that is, should the complaint suddenly become synocha, we know that the treatment of synocha is applicable. Should symptoms of debility supervene in synocha,

synocha, that is, should the complaint suddenly become typhus, we are assured that we run no risque in adopting the treatment of typhus. But where states of the system, requiring very different modes of treatment, produce nearly the same symptoms, as happens in ~~most~~ many instances which we shall have occasion to consider, (in the complaints termed the convulsive asthma of children, and the croup, for example) however difficult it may be, it is necessary, to find a diagnosis.

The small-pox and measles resemble, but never run into, each other; and the same observation, we shall find, applies to their modes of treatment.

SECT. I.

Of the Symptoms of Measles.

IT will be sufficient to divide the measles into the regular and irregular forms of the disease; the characteristic symptoms of the rubeola anginosa not being of sufficient importance to constitute a separate division.

The division of measles into regular and irregular, has not unaptly been compared to that of small-pox into distinct and confluent. The irregular measles however is not so well defined a form of disease as the confluent small-pox, and the division may be more justly compared to that of small-pox into regular and anomalous.

1. Of the Symptoms of Regular Measles.

In laying before the reader the symptoms of regular measles, I shall pursue nearly the same order which was followed in detailing the symptoms of small-pox; in the first place, pointing out the symptoms which precede the eruption; secondly, describing the eruption; thirdly, enumerating the other symptoms which appear while the eruption is present.

It is a more distinct plan to describe the different appearances of the eruption, and having done so, recur to the period of its commencement, and mention the symptoms which accompany it, than constantly to interrupt the account of the eruption, in order to notice these symptoms. The former

former method is less subject to confusion, and better assists the memory.

Having enumerated the symptoms of the eruptive fever, the circumstances necessary to be known respecting the eruption itself, and the symptoms which accompany it, we shall still find a set of symptoms remaining which demand particular attention. In the fourth place, therefore, I shall enumerate the symptoms which supervene after the eruption has disappeared.

We cannot distinguish the first attack of measles from that of other fevers. The patient, for the whole of the first day, generally complains of alternate heats and chills. On the second day, though sometimes not till the third, the fever is completely formed, and certain symptoms make their appearance by which this fever may generally be distinguished from others. The symptoms of the eruptive fever, therefore, may be divided into those which it has in common with other fevers, and those which characterise it.

Along with other symptoms common to febrile diseases the patient generally com-

plains of much thirst, is often troubled with nausea, sometimes with vomiting. The tongue is generally white and moist. In the more alarming cases subsultus tendinum, spasms of the limbs, delirium, or, what more frequently happens, coma supervene.

The last symptom indeed so frequently attends the eruptive fever of measles, that by some it is regarded as one of its diagnostic symptoms. This symptom indeed is not to be overlooked in forming the diagnosis of any eruptive fever; in all of which it is more apt to supervene than in fevers properly so called.

Adults in particular generally complain of much head-ach; and children, it has been observed, appear unusually morose. Pains of the back and loins also often attend this period; the face is flushed, the pulse frequent and hard, the respiration hurried, frequent, and sometimes interrupted with sighs. These symptoms generally suffer some remission in the morning, returning in the evening with increased severity.

On the third day, the nausea and vomiting

ing increasing or appearing now for the first time, the skin becomes hotter and more parched. If the patient has hitherto escaped delirium, it frequently shews itself on the evening of this day, or increases if it had supervened at an earlier period. When there is no coma the inquietude is considerable, and the sleep, if there be any, disturbed. The inquietude and distress of mind, Rhazes observes, is greater in the measles than in the small-pox.

The matter rejected by vomiting is generally bilious, and when a diarrhœa supervenes, which is also a frequent symptom, the stools are frequently of the same kind; and in children for the most part of a green colour; "Quo fluxu," Burserius observes, "ubi supervenit, vomitus et vomituritio "fere sedantur." The diarrhœa, he adds, does not impede the appearance of the eruption. In other cases however the bowels are costive, and sometimes, as in small-pox, there is a tendency to sweating. Adults, Frank * says, have been observed to

* Epitome de Cur. Hom. Morb.

sweat, but not so frequently or profusely as in small-pox. These sweats, he remarks, often prove beneficial.

Such are the symptoms which the eruptive fever of measles has in common with many other febrile diseases. As far as the prognosis depends on them, it is collected in the same way as in fevers properly so called. The more parched the skin, the harder and more rapid the pulse, the more hurried and difficult the breathing, the more the countenance is flushed, and the greater the coma or delirium, the less favorable is the prognosis.

A considerable affection of the breathing with an unusually hard pulse, is particularly to be dreaded, on account of the tendency to pneumonic inflammation in the measles.

The following may be regarded as the diagnostic symptoms of the eruptive fever of measles. It is not meant that these symptoms are never met with but in the eruptive fever of measles; they are the symptoms of common catarrh; but there they are not accompanied with the symptoms

toms just enumerated, the fever for the most part is moderate, and always, we shall find, proportioned to the affection of the head, fauces, or breast.

On the second day of measles, if not earlier, the patient is attacked with a dry cough and hoarseness, with a sense of heaviness in the head and eyes. The cough is often severe and obstinate, Morton* calls it, "Tussis admodum molesta, frequens, perti-" nax et ferina, quæ opii ipsius vires sopo-" riferas plane superat." And although, he adds, a cough often precedes the eruption of the small-pox and scarlatina, yet it is seldom so violent as that which attends the eruptive fever of measles.

The cough is sometimes the first symptom of the complaint. Sometimes, Hoffman observes, it troubles the patient for a fortnight before the fever comes on. Other writers make the same observation. Of an epidemic at London in 1753 Dr. Heberden remarks, the cough often preceded

* See Morton de Morbillis in his work De Febribus Inflammatoriis.

the measles for seven or eight days. In such cases the cough is sometimes accompanied with pains of the throat, head, and back.

About the time that the cough generally supervenes, the throat becomes inflamed, impeding deglutition, and increasing the secretion of saliva. And in some cases, Frank observes, a profuse ptyalism supervenes. There is generally a sense of oppression and uneasy tightness about the breast, occasioning a degree of dyspnœa.

The appearance of the eyes however may be regarded as the best diagnostic symptom. They are red, swelled, itchy, very sensible to light, and watery, the tears sometimes falling over the cheeks.

The membrane of the nose is alo inflamed, a copious thin secretion often running from it, and occasioning frequent sneezing. "Nec rarum est," Burserius remarks, speaking of the increased secretion from the nose, "sanguinem inde etiam "abunde manare, quo caput oculi et fauces "plerumque sublevantur." The hemorrhagy from the nose however has sometimes been

been so profuse as to threaten danger. The various hemorrhagies which occur in synocha occasionally appear in the eruptive fever of measles.

The eruption of measles is much less apt to be preceded by epileptic fits, than that of small-pox. In children they now and then occur. Like the eruption of small-pox too, that of the measles is sometimes preceded by severe pain of the back, which is an unfavorable symptom.

These symptoms in various degrees generally continue to increase till the eruption appears.

Such is the eruptive fever of measles; and it has been observed of this complaint, as of small-pox, that the violence of the succeeding disease is generally proportioned to that of the eruptive fever.

With respect to the prognosis at this period, it may, upon the whole, be observed, that it is derived less from the state of the catarrhal, than that of the febrile symptoms, unless the former threaten suffocation, which sometimes happens, particularly in children

children, or we have reason to dread an inflammatory affection of the lungs.

It appears from what has been said, that the circumstances which distinguish the eruptive fever of measles from catarrh are, 1. The one complaint arising from contagion, the other from cold. 2. The greater violence of the febrile symptoms compared with the catarrhal in the measles. 3. The state of the eyes; for however mild the other catarrhal symptoms are, the affection of the eyes which in common catarrh are less generally affected than the nose and throat, is always considerable in the measles. Lastly, certain symptoms which frequently accompany the eruptive fever of measles, and are seldom observed in catarrh, particularly coma.

When the eruption makes its appearance, it places the nature of the complaint beyond a doubt. The eruption generally shews itself towards the end of the third, or beginning of the fourth, day; although in some cases it is delayed to the fifth. It comes out on the forehead, in small points, like the bites of fleas, which at first are generally

nerally distinct, but here and there increasing in number and size, are soon formed into small clusters of different shapes; so that the face seems marked with red stains of various size and figure. In these clusters the individual pustules are seen with difficulty, but are always readily felt, rendering the parts they occupy rough to the touch. While the eruption is coming out, some degree of moisture is frequently observed on the skin; which is a favourable appearance.

From the face, the eruption gradually spreads to the neck, breast, trunk, and extremities. The eruption generally appears on the extremities, the day after it shews itself on the face, seldom either later or earlier. It sometimes, though rarely, happens that the eruption does not appear on the extremities at all.* Frank observes, that the morbillous like variolous eruption, sometimes appears in the mouth affecting the tongue.

On the trunk and extremities the small

* Dr. Heberden.

pustules

pustules are often more numerous, but they are generally less prominent, than on the face, so that on the former the red stains are often broader, though seldom so rough, as on the latter; although in all places where there is redness the inequality of the cuticle may be perceived. These stains vary in different cases, being broader and redder in some than in others.

Those in the face continue red or rather increase in redness for two days. On the third they assume a brownish colour. In the course of the fifth or at most of the sixth day of the eruption, that is, about the eighth or ninth day of the disease, the redness on the face disappears, although traces of the eruption often remain for four or five days longer. The cuticle is now broken and raised in the places which the eruption occupied, so that the face appears covered with a light whitish powder.

It is observed by Frank and others, that when the eruption is not very favorable, it sometimes leaves pits in the skin like those which follow the small-pox.

When the redness has almost left the face

face it is at its height in the extremities, where about a day or two later it runs the same course. The eruption continuing red longer than usual, is an unfavorable symptom. The more early and free the desquamation, which occasions the whitish appearance just mentioned, the more favorable is the prognosis. The eruption sometimes becomes livid and has even been observed to assume almost a black colour. These appearances indicate much danger. Sydenham and others observe, that they are not uncommon when the hot regimen and stimulating medicines have been employed, and are only to be removed by discontinuing the mode of treatment.

During the eruption, the face is turgid, but not swelled as in small-pox, and subsides as the eruption goes off. The eye-lids are sometimes so much swelled as to close the eyes.

It sometimes happens, as in mild cases of small-pox, that on the appearance of the eruption the fever entirely ceases; more frequently however it brings only partial relief. Sydenham observes that he never saw

saw the vomiting recur after the eruption was out. Burserius makes the same observation, adding that the increase of temperature is generally lessened, and the pains of the loins, the delirium, and spasms mitigated. But the cough and difficulty of breathing are often increased at this period, even when the other symptoms suffer a considerable remission. The affection of the eyes and coma also often remain undiminished. More rarely even the febrile symptoms suffer no remission, and in some cases they even become more severe, after the eruption; and continue so till it terminates in desquamation. At the latter period a flow of sweat or of urine, a diarrhœa or other spontaneous evacuation, sometimes supervenes, followed by a remission of all the symptoms.*

Although the fever very generally disappears at the period of desquamation, if not before it, yet this is not universally the case; it sometimes continues and even be-

* Dr. Heberden mentions an instance in which the cough was relieved by a copious salivation, which seemed to render the other symptoms milder.

comes

comes more alarming than at any former period. The coma in particular, Dr. Heberden remarks, sometimes returns after the eruption, and has even proved fatal at this period.

There is generally a considerable tendency to inflammation throughout the whole course of the measles, and those parts are most subject to it, which are most apt to be inflamed in common catarrh, the eyes, nose, fauces, and lungs. The inflammation of the eyes, nose, and fauces, is usually of little consequence; it seldom becomes very troublesome, and declines with the other symptoms of the complaint. The inflammation of the lungs is more to be feared. It may supervene at any period of the complaint, but is most frequent after the eruption. If the fever continues at this period of the disease, the cough seldom fails to do so likewise, and this cough and fever often become a real pneumonia, or in scrophulous habits degenerate into phthisis pulmonalis.

Such indeed is the tendency to inflammation in measles, that blood taken at any period

riod almost always shews the buffy coat. There can be no doubt however that this tendency has been increased by the treatment formerly pursued in this as well as in other fevers. Those, says Sydenham, who had been treated with the hot regimen and stimulating medicines were most subject to inflammation of the lungs.

When neither the habit nor mode of treatment are bad, such consequences of the measles are far from being frequent, and then in most cases the febrile symptoms are moderate and the danger inconsiderable. Sydenham, from very extensive experience, has pronounced the measles a safe disease. It can only be regarded as such, when the fever abates on the appearance of the eruption, and ceases altogether at the period of desquamation, leaving the patient free from cough and dyspnœa.

The diarrhœa, which is generally salutary towards the termination of the disease, sometimes becomes profuse and troublesome or even dangerous. The same is true of other evacuations. Frank says, a profuse hemorrhagy from the nose has sometimes proved

proved fatal after the eruption had disappeared.

Such is the course of the regular measles. It sometimes happens that it varies, yet in circumstances so trifling, that the disease still deserves the name of regular. Thus it sometimes happens that the eruption makes its first appearance on the neck or shoulders, instead of the face. It sometimes appears sooner, and sometimes later, than the usual time. There is sometimes no desquamation on the disappearance of the eruption. This happened in the measles of 1674 described by Sydenham, and Frank also observes, that he has sometimes seen the measles disappear without any desquamation.

Although these slight varieties do not warrant the name of irregular, yet they seem to indicate a variety, in general more dangerous, and more liable to be attended with inflammation of the lungs, than the more regular forms of the disease. Thus Sydenham observes of the measles of 1674, that more died of this measles than of that formerly epidemic; for the fever and dys-

 pnœa,

pnœa, which are common in the decline of the disease, were more severe and bore a greater resemblance to true pneunonia. Quarin * indeed remarks, that the eruption of the measles sometimes goes off without desquamation, the state of the patient notwithstanding being quite favourable. These slight variations from the common course, may be regarded as the connecting link between the regular and irregular forms of the disease.

2. Of the Symptoms of Irregular Measles.

The irregular measles is a very dangerous, but fortunately, not a very common disease. Sydenham says nothing of this form of measles, for that of 1674 certainly does not deserve the name of irregular. This is surprising, as the irregular measles raged in London during his practice. He describes the measles of 1670 and 1674, and passes over in silence the regular measles which raged in 1672, as we are informed by the celebrated Morton, who

* De Febribus.

says,

says that this epidemic destroyed nearly 300 * weekly.

This epidemic appeared in the autumnal season, whereas the regular measles, like other inflammatory complaints, generally makes its appearance about January, continues to increase to the vernal equinox, and then gradually declines, till it altogether disappears, about the summer solstice. This distinction however is not always observed; the irregular, like the regular, measles most frequently appears in the vernal months.

Since the time of Morton, the irregular measles has been described by a variety of authors, Huxham, † Matthiew, ‡ Burserius,

* Dr. Dickson accuses Morton of having greatly exaggerated the fatality of this epidemic. We have reason to believe that Morton was deceived with respect to its fatality. See Dr. Dickson's paper in the 4th vol. of the Medical Observations and Inquiries.

† See Huxham de Aere et Morbis Epidemicis, where he gives a short account of the epidemic measles which raged in the autumn of 1742.

‡ See a paper by Matthiew in Baldinger's Sylloge Opus. Select. in which he gives a copious account of the irregular measles which raged in Alsace in 1766

rius,* Vogel,† &c. In the 4th vol. of the Medical Observations, the reader will find an account of this form of the disease by Dr. Watson, as it appeared in the Foundling Hospital in the springs of 1763 and 1768. Most of the later writers on the measles notice this form of the complaint.

In the eruptive fever of the irregular measles, there are not many circumstances to distinguish it from that of the regular. The symptoms in general are more violent and the fever is sooner formed. The affection of the eyes, cough, and fever, being often considerable from the very commencement of the complaint. On the first night the patient is very restless, and on the next day the fever generally rises high, the cough and inflammation of the eyes increasing.

and 1767. In this treatise the reader will find references to other writers who treat of this form of the complaint.

* Institut. Med. Pract. The irregular measles described by Burserius differs considerably from that described by other writers, and resembles more the measles of 1674 described by Sydenham, which Burserius regards as an irregular form of the disease.

† De Cog. et Cur. Morb.

The

The eye-lids are sometimes so much swelled that they cannot be separated, and the eye-ball itself is often swelled and prominent; and in some cases there is much pain and inflammation of the meatus auditorius.

The pulse is now often more frequent, but less hard than in the regular measles. For the most part there is some degree of dyspnœa, and little or no expectoration attends the cough. When an expectoration of mucus attends the cough, Matthiew observes, it generally relieves both the febrile and local symptoms.

The restlessness increases, with a parched skin, much thirst, and a sense of tightness and oppression about the præcordia. If coma does not supervene, the patient generally complains of an acute pain, often accompanied with a sense of heaviness in the head, or he becomes delirious.

The fauces are of a deep red colour, and sometimes, Vogel observes, assume the same appearance as in the cynanche maligna. Dr. Cameron, in the 21st vol. of the Gentleman's Magazine, mentions several ca-

ses in which it had this appearance, so that he regarded the complaint as a combination of the measles and cynanche maligna. The tongue is generally very foul, and the stools often unusually fetid.*

The eruption frequently makes its appearance on the second or third day, it is sometimes delayed to the fourth, fifth, or even a later period. In the epidemic described by Dr. Watson, the eruption generally appeared on the second day; whereas Burserius observes that in the irregular measles, it frequently does not take place till the third, fourth, fifth, sixth, seventh, or even eighth, day. In one of Dr. Cameron's patients the eruption appeared on the sixth day.

When the eruption, Burserius observes, is delayed to the fourth or fifth day, or longer, the excitement is less than in the regular measles. Debility often supervenes at an early period, the fever assuming the form of typhus. This change always indicates much danger, and if the patient escapes, his recovery is generally very slow.

* Matthiew.

The

The eruption does not always appear first on the face, as in the more benign forms of the disease, but sometimes on the shoulders, the neck, or breast.

The duration of the eruption in irregular measles, is as various as that of the eruptive fever, though generally proportioned to it. When the eruption appears on the second day, it generally disappears on the fourth, or at most the fifth, or sixth day. When it does not appear till the fifth day, or later, it is often protracted to the twelfth, fourteenth, or seventeenth, or even twentieth day, at different times assuming various appearances; at one time red, at another pale or livid; and in some cases it assumes a black appearance.

Whether the complaint runs rapidly or not, the febrile symptoms generally suffer a considerable remission, and are sometimes for a short time wholly removed, after the disappearance of the eruption. In neither case however, is there any remission of the fever on its first coming out. But on the contrary the symptoms just enumerated are generally increased at this period. If nau-

sea and vomiting have not appeared earlier, they very frequently supervene after the appearance of the eruption, and rise to a greater height than in the regular measles. The affection of the throat increases; the same may be said of the delirium and coma, when these symptoms have appeared at an early period; where they have not, either the one or the other generally makes its appearance now. The pulse becomes more frequent and less full, and when the disease has been protracted, small, feeble, and often irregular; the cough is rendered more violent, the hoarseness increases, the breathing corresponding to the state of the pulse becomes frequent and anxious, the dyspnœa sometimes threatening suffocation. Symptoms denoting the last stage of debility succeed, namely, dropsical swellings, petechiæ, hemorrhagies, tremors, subsultus tendinum, and convulsions which are often the forerunners of death.

In general, however, the fatal termination is delayed to a later period. In the irregular, as well as the regular measles, the symptoms which take place after the eruption has

has disappeared, are often most to be dreaded. Although the fever at this period generally abates, many of the symptoms become worse. The inflammation of the eyes sometimes degenerates into sores, which, if the patient survives, often continue to harrass him for a long time. The cough, dyspnœa, and oppression, frequently remain and are often increased, with a frequent, feeble, and sometimes irregular, pulse, and other symptoms of debility.

In this state diarrhœa sometimes supervenes, and generally serves only to increase the debility. When the delirium returns at this period, it is generally a fatal symptom.

When on the contrary the skin becomes moist, the restlessness is diminished, the cough and dyspnœa abate, and the strength begins to return, the pulse becoming fuller and less frequent, the prognosis is good.

Inflammation of the lungs is more frequent at all periods of the irregular than regular measles. Suppurations of the brain, internal ear, and other parts also, frequently occur in this form of the disease, and sometimes prove fatal. Swellings now and then

appear

appear about the neck, on or about the fifth day, and are a very unfavourable symptom. If the patient survives, they often form abscesses and give much trouble.*

From what has been said it appears, that the regular and irregular measles differ chiefly in the four following circumstances.

1. All the symptoms, whether febrile or catarrhal, are generally more violent in the irregular, than in the regular, measles.

2. The fever in the former always shews a tendency to typhus.

3. In the regular measles, the affection of the fauces always resembles that produced by cold; in the irregular, the fauces are frequently livid, and often assume completely the appearance of the cynanche maligna.

4. The duration of the different stages of the irregular measles is more uncertain. The eruptive fever, as well as the eruption, in regular measles continue for a certain length of time, at least never much exceed, or fall short of, it. In the irregular

* Matthiew.

measles

measles, the course both of the one and the other is sometimes very rapid, at other times very lingering.

The irregular measles might therefore be divided into two varieties, that in which the symptoms run high and are soon terminated, and that in which they are less violent and longer protracted; and there is the more room for such a division, as the one of these varieties has been epidemic without the other making its appearance. The same epidemic however often assumes both forms.

Besides the regular and irregular forms of the disease, there are certain varieties as in small-pox, which now and then occur in all epidemics. The fever with all its usual symptoms, Quarin observes, has sometimes appeared without the eruption. Others make the same observation, the accuracy of which is called in question by Frank, but not (it appears from a variety of observations) on sufficient grounds. "During this "measly season," (it is remarked in the fifth vol. of the Medical Essays) "several people "who never had had the measles, had all "the preceding symptoms of measles, "which

" which went off in a few days without " any eruption, which they underwent " months or years afterwards." The reader will also find a case of the same kind related in Morton's work, " De Febribus Inflamma- " toriis Universalibus." The case is entitled, " Febris morbillosa, absque ulla efflo- " rescentia vel comitante vel subsequente, " sanata."

It even appears from the following observation, that the contagion of measles may produce some of the symptoms peculiar to the measles, without either fever or eruption. Dr. Home, in his account of the manner of communicating the measles by inoculation, which I shall presently have occasion to describe, observes, " March 27, " inoculated a child of eight years old, with " the same blood which had been kept ten " days loosely in my pocket-pook; I was " afraid when I used it that it was too " weak. The sixth day this child sneezed " much, but never was hot or struck out. " This child took the measles in the natural " way about two months afterwards."

It also sometimes happens that, a few days

days after every symptom of the complaint is gone, the fever again returns, and is again attended with the eruption of measles. "But it often happens," an author in the 2d. vol. of the Medical Museum observes, "after the measles are gone, the patient "purged and returned to his usual diet, "that in the space of ten days he is seized "with grievous oppression at the breast, "and great anxiety, a fever, thirst, some "spots on the skin of a deeper red than the "former. Faint sweats and short breath- "ing conclude the scene, whereof many "have died the last summer. And this fe- "ver seems sometimes induced by cold, and "overloading the stomach." The second appearance of the measles is most frequent in the irregular form of the disease. Matthiew observes of that of Alsace, that soon after the eruption had disappeared, a new fever came on, followed by a second eruption.

The following are the principal consequences to be dreaded from the measles, all of which are most apt to follow the irregular form of the disease.

There

There is no complaint more apt than the measles to call into action, if I may use the expression, any scrophulous tendency. Hence the most frequent consequences of the measles are, scrophula in its various forms; glandular tumors, marasmus from obstruction in the mesenteric glands, obstinate sores* often affecting the bones, and the most fatal of all forms of scrophula, phthysis pulmonalis. Even where there is no tendency to phthysis, ~~other~~ inflammatory affections of the lungs are frequent after the measles.

The bowels are often left in a very weak state, a chronic diarrhœa remaining, which has sometimes proved fatal.

If we except the lungs, no part suffers so frequently as the eyes, which (as appears from what has been said) are much affected throughout the whole complaint.

The ophthalmia often remains after the other symptoms, and becomes obstinate;

* See the observations of Dr. Watson in the 4th vol. of the Medical Observations, and Dr. Huxham's Account of the Malignant Measles which raged at Plymouth in 1745.

and

and in some cases the sight has been lost from ulceration of the cornea, in others from an affection of the nerve, a true amaurosis supervening.*

When the measles has been tedious and severe, it sometimes terminates in dropsy, which, like the marasmus, seems frequently to depend on glandular obstruction.

SECT. II.

Appearances on Dissection.

ON this part of the subject, there is little to be observed. If the patient dies under the eruption, the trachea and larger branches of the bronchiæ, as in the small-pox, are often found covered with it; which may account for the increase of the cough after the appearance of the eruption.

When the patient dies with a swelled belly and hectic fever, the glands of the mesentary are found indurated; when of phthisis, indurated tumors of various size,

* Vogel.

some

some of them containing pus, are observed in the lungs. Such appearances however are not connected with the measles, but with other complaints, with which it is complicated. They will afterwards be considered more particularly.

It was observed above, that inflammation of the viscera is more frequent in the irregular than in the regular measles; in the former also it is more liable to run to gangrene. Hence, in the accounts of the dissection of those who died of irregular measles, we find gangrene of some of the viscera an usual appearance. Dr. Watson observes of the putrid measles, "Of those "who died, some sunk under laborious res- "piration, more from dysenteric purging, "the disease having attacked the bowels, "and of these one died of a mortification "in the rectum. Besides this, six others "died sphacelated in some one, or more "parts of the body. The girls who died, "most commonly became mortified in the "pudendum." He also mentions ulcers, which sometimes became sphacelated on the cheeks, gums, and jaws.

"Several

"Several were opened," Dr. Watson continues, "under different circumstances "attending this disease. In some who died "of laborious respiration, after the feverish "heat and eruption were passed, the bron- "chial system was found very little loaded "with mucus, but the substance of the lungs "was tender, and the blood vessels were "very much obstructed and distended. In "some who died of laborious respiration "and extreme debility, many strong adhe- "sions were found between the lungs and "plevra. The lungs were distended with "blood, and part of them had begun to "sphacelate. Part of the jejunum was "sometimes inflamed and contained several "worms." In some who died suddenly, it was found that the sphacelus of the lungs had occasioned a fatal hemorrhagy. "Col- "lections of purulent matter," Dr. Wat- son adds, "were observed in none; on "the contrary, in this putrid disease, "every morbid appearance indicated a "sphacelus."

SECT. III.

Of the Causes of Measles.

THE measles, like the small-pox, seem to have been unknown to the ancients, although on this indeed there are some disputes.* The Arabians certainly first accurately described the disease. It is from them we have the name morbilli. Rhazes, in particular, gives us both its symptoms and the mode of treatment practised in Arabia, which as well as the treatment of small-pox was more judicious than it had been with us till early in the present century.

From what we know of the history of measles, and what we every day see, we cannot doubt that it arises from a specific contagion.

So much was said of contagion in general, that there is little to be added here.

* See the observations of Matthiew and others.

The

The measles, like other contagious diseases, is not immediately produced when the cause is applied, but after the contagion has remained in the body for a certain length of time. The measles appear earlier after infection than the small-pox, and the time of their appearance is rather more uniform, being generally about the sixth and seldom later than the eighth day. Dr. Heberden observes however, that he has known the appearance of measles delayed even to the 14th or 15th day after infection.

The habits of body in which the measles are most apt to prove benign or otherwise, are far from being well ascertained; almost all we know on this subject is, that they are particularly unfavorable in plethoric, and often still more so in scrophulous, habits. The measles appear to be less dangerous in pregnant women than the small-pox. Dr. Heberden says, he never knew any harm done by this complaint in pregnancy. It sometimes happens however, as in the case of small-pox, that the fœtus in utero receives the measles from the mother.

The measles seldom attack the same per-

son a second time, of which nevertheless there are a few well authenticated instances. "Nunquam enim," Morton observes, "in "tota mea praxi novi quemquam, præter "unum puerum, secunda vice hoc morbo "correptum." In the Medical Institutes of Burserius, the reader will find that the measles have not only appeared a second but even a third time in the same person. "Quod secundo et tertio eumdem hominem "in eos incidisse ex fidis observatis con-"stet;" and in the fifth volume of the Edinburgh Medical Essays, it is observed of the measles of 1735 and 1736, that many who had formerly had the complaint were seized with all its symptoms, not excepting the eruption, which, it is said, resembled that caused by the stinging of nettles.

The great success which attended inoculation for the small-pox, induced many to believe that similar advantage might be expected from it in the measles. The very prevalent opinion of its being received in the natural way by the lungs, and the lungs being the chief seat of danger in this disease seemed farther to strengthen the opinion.

Dr.

Dr. Home of Edinburgh, however, was the first who actually made the experiment.

He met with some difficulty from the measles not forming matter, and his not being able to collect a sufficient quantity of broken cuticle at the time of desquamation, to produce the disease. "I then applied," he observes, "directly to the magazine of "all epidemic diseases, the blood." He chose the blood when the eruption began to decline in patients who had a considerable degree of fever. He also ordered it to be taken from the most superficial cutaneous veins where the eruption was thickest.

While the blood came slowly from a slight incision it was received upon cotton, and an incision being made on each arm of the person to be inoculated, the cotton, as soon as possible after it had received the blood, was applied over these incisions, and kept upon them, with a considerable degree of pressure. He also used the precaution of allowing the incisions of those to be inoculated, to bleed for some time before the cotton was applied, that the fresh blood might not wash away or too much dilute

the morbillous matter. The cotton was permitted to remain on the part for three days. How far all these precautions are necessary to the success of the operation has not been determined.

Dr. Home inoculated ten or twelve patients in this way, in whom the operation succeeded equal to his hopes. The eruptive fever generally commenced six days after inoculation, and the symptoms of the complaint were milder than they generally are in the casual measles. The fever was less severe, the cough either milder or wholly absent, the inflammation of the eyes was trifling; they watered however as much, and the sneezing was as frequent, as in the casual measles; nor did bad consequences follow any case of inoculated measles. No affection of the breast remaining after it.

The chief difference between the casual and inoculated measles seemed to be, the absence of any pulmonic affection at all periods of the latter.

Dr. Home now regarded it as ascertained that the natural measles are received by the lungs, and that on this circumstance depends

pends the danger of the disease. He wished however to ascertain the symptoms of the complaint when evidently received by the lungs. He therefore put a piece of cotton which had remained in the nose of a patient under measles, into that of a healthy child, making him breathe through the infected cotton. The experiment although repeated did not succeed in inducing the disease. Nor, it is evident, if successful, would this experiment have decided the question whether or not the casual measles are received by the lungs. Dr. Home's experiments have not met with the attention they deserve. In scrophulous habits particularly, it would certainly be worth while to try his mode of inoculation. If a more extensive experience prove it capable of producing the effects ascribed to it by Dr. Home, it will certainly be an improvement of considerable importance.

The remains of the measles, to use the language of medical writers, seem to lurk in the body, that is, a morbid tendency remains for some time after this complaint,

even where the patient appears to have regained his usual health.

It was observed above, that when the small-pox supervenes on the measles, the former is often of an unfavorable kind. This has been particularly remarked of the small-pox supervening on the putrid measles.

SECT. IV.

Of the Treatment of Measles.

AS the treatment in small-pox is divided into that of the distinct and that of the confluent form of the disease, so we may divide the treatment of measles into that of regular and that of irregular measles.

It has often been observed that the treatment of small-pox and measles, like their symptoms, is similar. It will be found however that almost all which either in the symptoms or mode of treatment of these complaints is similar, is only what is common to them and all other idiopathic fevers in which the synocha prevails.

It is true indeed that catarrhal symptoms often

often attend the small-pox, but these are not essential to the complaint, and are at most so slight as to demand little attention. In the measles, they not only form an essential but the most alarming part of the complaint.

As inoculation is not practised in the measles, we seldom have the advantage of certainly knowing under what complaint the patient labours as soon as he is attacked. If however we find that he never has had this complaint, that about six days before the appearance of the fever he had been exposed to the contagion of measles, and that the fever is accompanied with the diagnostic symptoms pointed out, there can be little doubt of the nature of the disease. The information required however cannot always be procured, and the diagnostic symptoms are often not alone sufficiently decisive at an early period to mark the disease with certainty, so that in many cases we cannot positively determine the disease to be measles, till the eruption appears. But this is not a matter of much consequence, since the train of symptoms present require

require very nearly the same mode of treatment, whether the complaint be measles, common synocha, or catarrh; the chief difference being that the same remedies are employed more assiduously in measles.

The treatment of the eruptive fever of measles differs little from that of the eruptive fever of small-pox. The diet should be the same as in the more severe forms of the distinct small-pox. We seldom see the measles so mild a disease as the most favorable inoculated small-pox, for even in the least dangerous forms, inflammatory complaints are to be dreaded. On this account, we find practitioners insisting much on a diluent and antiphlogistic diet, one of the best means we possess of preventing the appearance of inflammatory complaints. "A carnibus quibuscunque arcebam," Sydenham observes, "of the diet in measles, "juscula avenacea, hordeacea et similia, "nonnunquam et pomum coctum concede-"bam." "Dietam vero diluentem," Huxham* remarks, "mollem, omni carni va-

* De Aere et Morbis Epidemicis.

"cuam

" cuam instituere oportet." Morton, Mead, Burserius, and many others, might be quoted to the same purpose; the last of these even dissuades from the use of milk. M. De Lassone however, having experienced the good effects of milk in the small-pox, made trial of it in measles, and thinks it of great service, particularly when a bilious diarrhœa supervenes and becomes profuse. Dr. Mead recommends asses' milk instead of that of cows.

But in managing the antiphlogistic diet we must always recollect its tendency to produce debility, and in weak habits be careful not to push it too far. When the habit is very weak, Quarin justly observes, we must abstain from too much dilution.

With regard to exercise, if the patient find himself inclined, from the commencement of the febrile symptoms, to remain in bed, he should not be prevented; at the same time there is no occasion to confine him to bed against his inclination. In all cases, towards the period of the eruption, he feels fatigued and averse to motion.

Whether the patient be in bed or not,

extremes

extremes of heat and cold are equally to be avoided. By the former we always increase the febrile symptoms, by the latter we run a risk of increasing the catarrhal.

After the benefit derived from the application of cold in the small-pox was perceived, many recommended it with equal freedom in the measles, and this practice is still defended by some, particularly the followers of Dr. Brown. Sydenham, who contributed more than any other practitioner of this country, to introduce the cool regimen, when he cautions against keeping the patient too warm in measles, says nothing of the application of cold. "Neque "autem, vel stragulis vel igni, quibus sani "adsueverant quidquam adjici patiebar." In other places he makes similar observations. Morton, the contemporary and almost the rival of Sydenham, adopted the same practice in this respect, and their example has been followed by the best practitioners since their time. This much at least is certain, that if experience has not proved the harm done by a free application of cold in the measles, the practice has not hitherto

hitherto been sufficiently general to ascertain its safety; * at present therefore we may say of the degree of temperature, as of the exercise in this complaint, that it should in a great measure be regulated by the patient's feelings. It is particularly to be observed, that the partial or sudden application of cold, or exposing the patient to a current of air, is dangerous in the measles.

In most cases it is necessary to have recourse to other means for diminishing excitement. It is needless to repeat what has been said of nitre, saline draughts, &c. these are useful in all cases of excessive excitement. Acids, Quarin observes, are to be avoided, as they increase the cough.

Gentle cathartics are indispensable in all cases. They are not only useful by removing irritating matter and diminishing excitement, but also by obviating the tendency to inflammation in the head. Neutral salts are here perhaps the best cathartics; analogy is much in favour of calomel.

Emetics have not been much employed

* See the 650th paragraph of Dr. Cullen's First Lines.

in

in this complaint, except for the removal of certain symptoms, the treatment of which does not come under the general plan of cure.

The remedy which principally demands attention in measles, is blood-letting. Though the utility of blood letting when the symptoms run high is generally admitted, there has been some difference of opinion respecting the period of the disease at which it should be employed. For the most part Sydenham did not recommend it till towards the end of the disease; for which he has been criticised by many, particularly by Dr. Mead.*

Had Sydenham however taken the trouble to defend his practice in this instance, he might have found many solid arguments in support of it. Unless the inflammatory symptoms run unusually high, the danger at the commencement of the complaint is

* "Sanguis itaque, incipiente morbo, pro ætatis ac "virium ratione detrahendus est." See Dr. Mead's Monita et Præcepta Med. In this observation we perceive the remains of the hypothesis which led to an indiscriminate use of blood-letting in fevers.

inconsiderable;

inconsiderable; this period is succeeded by a greater or less remission, which is often followed by a more dangerous train of symptoms than any which preceded them. Why should we unnecessarily reduce the patient's strength in the two former stages, when in the last, should the inflammatory symptoms run high, more strength than can remain after such a disease is requisite to bear without injury the only means which can relieve them?

"As this fever," Dr. Cullen remarks, "is "sometimes violent before the eruption "though a sufficiently mild disease be to "follow, so bleeding is seldom very neces- "sary during the eruptive fever, and may "often be reserved for the periods of greater "danger which are perhaps to ensue." The reader will find a paper, in the 4th vol. of the Medical Observations and Inquiries, by Dr. Dickson, in which Sydenham's practice with respect to blood-lettting in measles is defended, and Dr. Mead censured for his observations on it.*

In

* Dr. Dickson's defence of Sydenham rests on the latter not having met with cases in which the excite-

ment

In some cases however, even unattended by visceral inflammation, the excitement is sufficient to warrant blood-letting at an early period, and we are here to determine as in common synocha. When the excitement is such as threatens immediate danger or much subsequent debility, we must have recourse to venesection.*

With regard to the employment of blood-letting at a late period of measles, it cannot be fully understood till the reader is made acquainted with its employment in inflammatory affections of the chest, which will afterwards be considered.

It is remarkable that blood-letting sometimes removes certain symptoms remaining after measles, for the removal of which under other circumstances very little is to be expected from it. Thus it has removed

ment was considerable in an early stage. But even when considerable, blood-letting should if possible be avoided at this period.

* The presence of the menstrual discharge, Dr. Heberden justly remarks, is no objection, as some have supposed, to the employment of blood-letting in the measles.

cough

cough, although unaccompanied by fever or the other symptoms denoting inflammation. It has even been found a successful remedy in the diarrhœa which remains after measles. "Quin et diarrhœa," Sydenham observes, "quam morbillos excipere dixi-"mus, venæsectione pariter sanatur."

Concerning the use of blisters, so generally recommended in this complaint, it is only necessary to repeat an observation already made. If our view in using them be to remove fever, we shall very constantly be disappointed; if to relieve local inflammation, we shall find them a powerful remedy. I shall presently have occasion to make some observations on the symptoms for which they are employed.

So long a course of antiphlogistic measures, as is sometimes requisite in the measles, often leaves the patient in a state of much debility; it is therefore necessary as soon as the inflammatory symptoms disappear, to use means for restoring the strength. In most cases a nourishing diet and a moderate use of wine will be sufficient, and the addition of the bark is proper

if there is no reason to dread a return of the inflammatory symptoms.

Concerning the treatment of irregular measles, it will not be necessary to say a great deal. Like that of the confluent small-pox, it may be divided into the treatment of irregular measles when accompanied with synocha, and that necessary when the fever is typhus.

In the former the treatment differs only in degree from that of the regular measles. Cooling laxatives and blood-letting are necessary, and must be employed in sufficient extent to reduce the symptoms of excitement, whatever be the period of the disease. In measles, as in small-pox, a prejudice has prevailed against letting blood before the appearance of the eruption; which demands as little attention in the one case as in the other. When the excitement threatens immediate danger or much subsequent debility, we must in the eruptive fever of measles, as in all other idiopathic fevers, have recourse to venesection. Nitre and kermes mineral are particularly recommended at this period by Matthiew.

The

The chief difference in the treatment of irregular measles accompanied with synocha, and the regular form of the disease, arises from the fever in the former being apt to assume the form of typhus. There is perhaps no febrile disease of this country more perplexing than a severe case of irregular measles, the excitement often indicating the most vigorous antiphlogistic means, while the succeeding debility frequently supervenes so suddenly as to render the use of these means even in the earliest stage precarious.

What appears to be the best plan in such cases has more than once been pointed out. It consists chiefly, in avoiding blood-letting if the excitement can be diminished by safer means; if not, employing it only to that extent which the urgency of the symptoms absolutely requires. If the excitement is prevented from rising too high during the first days, the nature of the disease will soon sufficiently overcome it, and then every ounce of blood which has injudiciously been taken, adds to the danger. The tepid bath has been recommended

when the excitement runs high; like other debilitating means it is to be employed with caution.*

When the fever has changed to typhus, at whatever period this happens, the opposite plan of treatment becomes necessary. Evacuations and even refrigerants are then hurtful. Refrigerants, Quarin observes, are particularly hurtful when the patient is weak; and Hoffman relates the cases of three children under measles, who fell a sacrifice to the use of nitre. There are no observations, as in the case of small-pox, which establish the utility of purging after the typhus appears.

Wine, bark, opiates, and as nourishing a diet as the stomach can receive, are then the remedies to be depended on.

There is nothing to be observed in addition to what has already been said of the use of these remedies. Some have been afraid of the bark in every form of measles; this fear however appears to be wholly groundless. Among other writers on putrid

* See the observations on this remedy in continued fever.

measles,

measles, the reader may consult for the use of the bark in this complaint the observations of Dr. Cameron in the 1st vol. of the Medical Museum, and the 21st vol. of the Gentleman's Magazine.

It only remains to point out the means to be employed when certain symptoms supervene, the treatment of which does not come under the general plan of cure. On this part of the subject there is little to be said here in addition to what was observed respecting the treatment of the corresponding symptoms in small-pox.

The symptom which generally demands most attention is the cough. The medicines which relieve it have been termed pectoral, and are either mucilaginous or oily. A little gum-arabic, syrup, and water, answer as well as any. Hoffman observes, that he has found nothing more effectual for abating the cough than fresh drawn oil of almonds mixed with syrup, and given frequently to the quantity of half a spoonful in water gruel.

Diluting the mixture however renders it less effectual, since it seems to act, as Dr.

Cullen remarks, merely by besmearing the fauces, thus allaying irritation at the glottis which is often the exciting cause of the cough. The less diluted it is therefore, provided it does not occasion disgust, the better it is calculated to answer the intention.

But Hoffman and other physicians of his time believed, that the advantage of pectorals depended on their being received into the mass of blood, and poured out on the lungs. They therefore gave them in large quantity. A quantity of diluting liquors by allaying excitement will often diminish the cough, but they should not be combined with the pectoral mixture, by which the good effects of the latter are almost lost. It should be given in the quantity of about a dram immediately after the patient drinks, that it may remain in and besmear the fauces, repeating it every time he drinks, or when the inclination to cough is frequent. The quantity given at once should be small, as nothing loads the stomach more than mucilaginous and oily medicines. Of the two, the former appear to be

be preferable; they oppress the stomach less, and are more liable to adhere to the fauces.

When the cough is very troublesome, Quarin observes, inspiring the steam of warm water is often serviceable.

The most powerful however of all the medicines we possess for allaying the cough is opium, but its exhibition requires caution in a complaint where the inflammatory diathesis is so prevalent. Morton regarded opiates as inadmissable previous to the appearance of the eruption. "Utut delirium, "tussis vigiliæ, &c. ea postulare videantur, "apprime, atque religiose abstinendum est."

When the cough remains after the measles, Vogel recommends small doses of the sulphur auratum antimonii, occasionally combined with opium.

A hoarseness sometimes remains after the measles, and when accompanied neither with fever nor dyspnœa is sometimes removed by the bark.*

Difficulty

* See a paper by Dr. Whytt in the third volume of Essays and Observations Physical and Literary. Tes-

Difficulty of breathing may often be relieved by inhaling the vapour of warm water. The volatile alkali, or a gentle cathartic, often relieve this symptom. These failing, we must have recourse to venesection if the pulse admits of it; if not, blisters are the best remedy.

When dyspnœa remains after the measles, a perpetual blister on the sternum or a seton in the side are the best remedies, except where this symptom is urgent and attended with fever, in which case, blood-letting is generally necessary; and then the issue will be found the best means to prevent its return. It is proper to use some precautions to prevent the inflammation of the eyes from becoming troublesome; exposure to light should be avoided, and they may be washed occasionally with a little rose or plantain water.

A spontaneous diarrhœa should be kept moderate, but not stopped, particularly by the use of astringents and opiates. When

taceous powders are said to be often serviceable in this hoarseness. See a paper in the second volume of the Medical Museum.

it

it remains after the disease, Hoffman recommends the cascarilla. If it does not disappear soon after the febrile symptoms, it is to be treated like a case of simple diarrhœa, but still with caution, on account of the tendency to inflammatory complaints, which remains after the measles. For the same reason it is necessary for some time cautiously to avoid exposure to cold, and the other causes of such complaints.

CHAP. IV.

Of the Scarlet Fever.

THE Scarlet Fever, or, as it is termed by medical writers, Scarlatina, is defined by Dr. Cullen,

"Synocha contagiosa. Quarto morbi "die facies aliquantum tumens; simul in "cute passim rubor floridus, maculis amplis "tandem coalescentibus, post tres dies in "squamulas furfuraceas abiens, superveni-"ente dein sæpe anasarca."

He

He divides the Scarlatina into two varieties, the Scarlatina Simplex, and the Scarlatina Cynanchica.

The former is defined, "Scarlatina nulla "comitante cynanche."

Dr. Cullen observes, that although in the space of forty years he had seen the scarlet fever epidemic six or seven times, it had always assumed the appearance of the scarlatina cynanchica, and was, for the most part, attended with ulceration of the fauces. It appears however from the observation of Sydenham and others, that the simple scarlatina has sometimes been epidemic, without the other form of the complaint showing itself. It generally happens, that in the same epidemic some have the scarlet fever with, and others without, the affection of the throat; while others have the affection of the throat without any eruption.*

* "During the prevalence of this epidemic," Dr. Clark observes, "some patients had erysipelatous in-"flammation of the throat without ulceration, others "had ulceration of the tonsils without any rash, and "some had the scarlet eruption and fever without any "affection of the throat." See Dr. Clark's Treatise on Fevers.

It

It has long been disputed whether the scarlet fever and malignant sore throat ought to be esteemed different diseases, or only varieties of the same disease. This dispute is only of consequence from its having made some noise. I shall delay any observations on it till the symptoms of both complaints have been laid before the reader.

The second variety of scarlatina, Dr. Cullen defines, "Scarlatina cum cynanche "ulcerosa." This is the most common form of the disease. Some think it should be regarded as a different complaint from that attended singly with the eruption or affection of the throat.* This question will be considered with the former; it is enough at present to observe, that they are both of little consequence, since neither, take it which way we will, affects the mode of practice.

In considering the symptoms of scarlet fever, I shall follow the same mode of arrangement as in the foregoing exanthemata.

* See Dr. Cullen's Synopsis Nosologiæ Methodicæ. p. 138.

In

In the first place, enumerating the symptoms which precede the eruption; secondly, describing the eruption; thirdly, enumerating the symptoms which accompany it; and lastly, those which follow it.

It may seem proper, in laying down the symptoms of scarlatina, to keep in view the division of this disease into the two varieties just mentioned; and this division might aptly be compared to that of the small-pox into distinct and confluent, or that of the measles into regular and anomalous.

For several reasons however it is unnecessary to insist much on the symptoms of scarlet fever unaccompanied by cynanche; it is not often met with; it may be readily known from what will be said of the scarlatina cynanchica; and it does not require any particular mode of treatment. It is so mild a disease indeed that the assistance of the physician is seldom necessary. The following is Sydenham's description of this form of the complaint. The patient, as in other fevers, is seized with chills and rigors, but does not complain of much sickness; soon

soon after this the whole skin is covered with small red stains, more numerous, broader, redder, but not so uniform as those in measles; these stains remain for two or three days and disappear with a desquamation of the cuticle, which appears in small scales that fall off and appear again two or three times in succession.*

SECT. I.

Of the Symptoms of Scarlet Fever.

AT the commencement, this fever differs little from others. It comes on with confusion of thought, lassitude, languor, dejection, chills, and shivering, often alternating with fits of heat. The thirst is generally considerable, and the patient is often troubled with anxiety, nausea, and vomiting. But the anxiety and vomiting are rather symptoms of the cynanche ma-

* See the 2d chapter of the 6th section of Sydenham's work, Circa Morborum Acutorum Historiam et Curationem.

ligna,

ligna, than of the scarlatina, and have been ranked among the diagnostic symptoms of the former.

Soon after the appearance of these symptoms the patient feels some degree of pain about the throat, increased on swallowing. This is to be regarded as a favorable symptom; in cynanche maligna there is little pain in swallowing, and it is only as it approaches to this disease that the scarlatina is dangerous.

The uneasiness of the throat is sometimes among the first symptoms, and in some cases, Aaskow* observes, it appears before any other. The sore throat is not often attended with cough or other catarrhal symptoms, but frequently with a sense of stiffness in the muscles of the neck. These circumstances distinguish the eruptive fever of scarlatina from that of measles, the sore throat which seldom attends the latter assisting the diagnosis.

In some cases of scarlet fever however, as in the measles, the eyes are inflamed,

* Acta Societ. Hafniensis.

watery,

watery, and incapable of bearing the light, the eye-lids are swelled, and the patient is troubled with sneezing*. More frequently cough has attended the eruptive fever of scarlatina, cases of which the reader will find in the works of Morton, one of the earliest writers on the complaint, and in Dr. Cotton's letter to Dr. Mead on a particular form of scarlatina prevalent at St. Alban's in 1748. Dr. Sims also observes of an epidemic scarlatina, that a short cough was a very frequent symptom, which was most severe when the throat was least affected.

On examining the internal fauces they are found very red and more or less swelled. A florid appearance and a considerable degree of swelling are favourable symptoms.

On the tonsils, velum pendulum palati, and uvula, the parts chiefly affected with inflammation, there generally, not always, appears a number of small, whitish, or greyish specks or sloughs. The darker their colour the less favourable is the prognosis.

* See Frank's Epitome De Cur. Hom. Morb.

The

The skin is now very hot, the pulse frequent, sometimes full and strong which is a favourable symptom, at other times, particularly where the throat is of a purplish hue, and the specks of a dark colour, it is small and weak, though at the same time often hard, a state of the pulse which always indicates danger. The breathing is hurried, difficult, and sometimes rattling. The fever generally suffers an exacerbation towards night, and delirium sometimes supervenes; or the patient becomes comatose; either of which symptoms indicates considerable danger.

What first seemed greyish specks often now appear small ulcers. The internal fauces and mouth are loaded with viscid mucus, and the swelling of the fauces increasing, the swelling becomes more difficult and painful.

In milder cases the sloughs continue till the fever is passed, and then falling off, an ulcer appears on one or both tonsils, which for the most part is well conditioned, and heals readily.

If hemorrhagy from the nose occurs at an early

early period, it often considerably relieves the fauces. A thin discharge from the nose, especially if fetid and if it excoriate the lips and nostrils, is a bad symptom. The same may be said of the diarrhœa which sometimes supervenes, and seems often to proceed from the morbid secretion of the fauces being swallowed.

But the purple colour and ulceration of the fauces, the coryza at least when the matter discharged is acrid, and the diarrhœa, are rather to be regarded as symptoms of the cynanche maligna than of the scarlatina.

Nausea and vomiting are more frequent in the progress than at the accession of the eruptive fever; and the vomiting, Frank observes, as in the eruptive fever of small-pox, is sometimes attended with pain at the stomach.

If the swelling of the throat at any period of the disease subside, a swelling sometimes appears in a neighbouring part. In an epidemic mentioned by Dr. Rush, a swelling behind the ear often followed that of the throat. Such a translation of the swelling generally

denotes an unfavorable form of the disease. That mentioned by Dr. Rush approached to the nature of the cynanche maligna.

In less favorable cases, a little before the eruption appears, the face is sometimes flushed and somewhat swelled, and the eyes blood-shot and watery. It sometimes happens, though very rarely, that in children the eruption is preceded by an epileptic fit.*

The period of the eruption is more uncertain than in the other exanthemata. When the symptoms are moderate, it is generally delayed to the third or fourth day; in more severe cases, it often appears on the second or even on the first day. Bang often saw it on the first day, Dr. Clark met with it within twelve hours from the commencement of the disease, and Dr. Cotton mentions cases in which the eruption appeared as soon as the fever.

The eruption first appears on the face, most frequently, Eikel observes, about the nose and mouth, like a red stain or blotch,

* See Sydenham's work on Acute Diseases, sect. 6th, chap. 2d, and a paper by Bang in the 2d vol. of the Acta Soc. Med. Hafniensis.

which

which disappears on pressure.* It soon spreads over the neck, breast, trunk, and at length over every part of the body which often appears uniformly red. When this is the case the prognosis is better than when the redness appears here and there in blotches, which is sometimes the case on the trunk, while at the same time the redness is uniform on the extremities. The degree of redness also varies much; it is sometimes so pale, (in certain cases, for example, mentioned by Dr. Cotton) as not to be very remarkable; in other instances, as in some mentioned by Dr. Withering † and De Meza,‡ the whole body is so red that it has been compared to a boiled lobster.

When the eruption is nearly inspected, it appears to consist of innumerable little pimples running together. Upon the extremities and in the interstices of the blotches on

* It sometimes makes its first appearance on the neck. See the observations of Eikel in the Act. Soc. Med. Haf. &c.

† See Withering on the Scarlatina Anginosa.

‡ See the observations of De Meza in the Act. Soc. Med. Haf.

the trunk, small points are often observed more prominent than those forming the stains, which is generally an unfavorable appearance.

The eruption seems much connected with the state of the throat, so that the former is seldom completely and uniformly diffused if the latter is alarming; and on the contrary if the affection of the throat be slight, the redness is more general.

Exceptions to this are mentioned by some writers. De Meza observes, that the sore-throat sometimes occurs without the eruption, and it often happens, he remarks, that in this case the sore throat is milder than it usually is when attended with the eruption. It is probable however, that the cases of sore throat alluded to by De Meza were of a different nature from that which attends the scarlatina. Dr. Rush, Frank, and others observe, that while the scarlatina anginosa prevails, other kinds of sore-throat are generally frequent.

A degree of swelling sometimes attends the eruption, appearing first on the face, especially on the eye-lids, afterwards on the neck,

neck, hands, and feet; in the majority of cases however this symptom is hardly perceptible.

The duration of the eruption is as uncertain as the time of its appearance. It frequently remains for three or four days, sometimes disappears within twenty-four hours. In general, however, the red colour begins to change into a brown in the space of two or three days; soon after this the skin becomes rough, and the cuticle begins to peel off, sometimes in small scales, at other times in large pieces, which process now and then continues as late as the twenty-eighth or thirtieth day. In most instances it is finished much sooner.

The nails have now and then been cast off with the cuticle; sometimes the cuticle of the tongue peels off at the same time.* In other cases the tongue only becomes clean. The tongue, Eickel observes, becomes clean while the desquamation goes on, which is a favorable appearance.

When the desquamation begins, a gentle

* See the observations of Bang and others.

sweat very generally appears, while all the symptoms abate and are soon wholly removed.

Such is the general course of the eruption in scarlatina; considerable variations have been occasionally observed. "Die "autem morbi quarto, quinto, vel sexto, sin- "guli scarlatinam efflorescentiam per cuti- "culam ubique sparsam perpetiebantur, "eamque per septem, octo vel decem dies "protensam."* Varieties of this kind however are rarely observed. The most remarkable variety in the eruption of scarlatina is analogous to the variety of measles, termed Rubeola Variolides. "In some," Dr. Rush observes, "an eruption like the "chicken-pox attended the sore-throat." This variety is called by Sauvages Scarlatina Variolosa.

The symptoms which accompany the eruption differ little from those which precede it. The febrile symptoms are seldom relieved by its appearance. The inflammation and swelling of the internal fauces in

* Morton De Feb. Scarlat.

some

some cases abate; in others, they are increased; and the viscid mucus, which is now often secreted in considerable quantity, renders the deglutition more difficult. The swelling however is seldom so considerable as it frequently is in other kinds of sore-throat. When the maxillary and parotid glands partake of the swelling, it is sometimes so considerable as to affect the breathing.

The viscid mucus frequently assumes the appearance of a crust covering the tonsils and neighbouring parts. When by the use of gargles this mucus is washed off, which may readily be done, the surface sometimes appears inflamed but sound, at other times covered with small ulcers. In the worst cases, small masses resembling coagulated blood are frequently spit up, and the acrid secretion from the nares is increased or supervenes if it did not appear before the eruption, excoriating the lips and nostrils. The eyes assume a dull and heavy appearance, and the face appears bloated, and affected with œdematous swelling; the hands and fingers are often affected in the

same way, and painful on pressure; or severe pains of the extremities without swelling, much restlessness, delirium or coma supervene. But such cases rather deserve the name of cynanche maligna than scarlatina.

In the most favorable cases the symptoms upon the whole become milder after the appearance of the eruption. The febrile symptoms indeed are seldom much relieved, but the inflammation and swelling of the fauces begin to abate, and by the time the eruption is over, if there be a free desquamation with moisture on the skin, have wholly disappeared, at most leaving only superficial ulcers of the tonsils, which soon heal.

The fever now abates, and for the most part in a short time wholly disappears; more or less of an œdematous swelling appearing on the legs and sometimes over the whole body, which in two or three days goes off without the assistance of medicine, some degree of debility remaining, which, as the appetite is generally keen, is soon removed by a nourishing diet. In less favorable cases, though more rarely, the febrile as well

well as other symptoms continue to harrass the patient after the eruption has disappeared.

It sometimes happens that although the patient is free of complaint for some days after the eruption disappears, yet in a short time, particularly if the skin has remained dry during the desquamation, symptoms of fever again shew themselves, and as it sometimes happens in the other exanthemata, are now and then followed by a second eruption. If the skin remains dry, Eickel observes, after the beginning of the desquamation, the disease will either be dangerous or protracted, the affection of the fauces and fever become worse, and in some cases a new eruption appears on the face and neck; which unfavorable symptoms, he adds, generally disappear as soon as the skin becomes moist.

The same author remarks, that a similar train of symptoms often supervenes both in the measles and erysipelas, when the skin remains dry at the time of desquamation.

If there be no moisture on the skin at the time of desquamation, a running from the

the ear, sometimes very copious and fetid, now and then supervenes, and the hearing has sometimes been impaired or wholly lost. It sometimes happens that a swelling of the parotid glands comes on at this period, which is now and then relieved by a spontaneous salivation. The swelling of the parotid glands is unfavorable, the running from the ear more so, and the prognosis is still worse if both symptoms attend, especially, Eickel observes, if the parotids shew a tendency to suppuration, from which, he says, he never observed any benefit.

The swelling of the parotids is generally relieved when the running from the ears is considerable, and again increases when this is lessened. Eickel remarks that while the running from the ear and the swelling of the parotids remain, the best diaphoretics cannot produce a general moisture on the skin. The swelling of the parotid glands, Dr. Sims observes, occurs at various periods of the disease, and seems when it is late of appearing to protract all the symptoms of the complaint, or even to renew them after they

they had ceased, the eruption itself not excepted.*

Sometimes the symptoms which succeed the eruption take a different turn, the patient falls into obstinate anasarcous swellings, or is attacked with dropsy of some of the cavities. At other times the swelling of the glands about the neck suppurate, obstinate sores forming in the nose and ears and even affecting the bones. The mouth, lips, and palate, and the parts in the neighbourhood of the anus, also occasionally suffer from ulceration.

The inflammation sometimes spreads to the trachea and lungs, occasioning hoarseness, violent coughing, and wheezing or rattling breathing;† or as in cases mentioned by Drs. Rush, Home, and others, a squeaking voice similar to that which attends the croup.‡

Symptoms

* See a paper by Dr. Sims in the 1st vol. of the Memoirs of the London Medical Society. Plenciz in his Tractatus de Scarlatina, Quarin in his work De Febribus, and others, make similar observations.

† See the observations of Dr. Clark.

‡ In the case of Dr. Morton's daughter, related by him,

Symptoms of debility often attended with scanty, sometimes with bloody, urine, have now and then appeared after the patient has remained well for some days or even weeks. This train of symptoms is mentioned by Plenciz, Quarin, and De Haen in the continuation of the 1st vol. of his Rat. Med.* Dr. Sims and Dr. Withering mention a similar train of symptoms, after the complaint seemed almost removed: there often supervened, the former remarks, an extreme degree of languor, which appeared to the patient the fore-runner of death, but which was not attended with much if any danger, and generally went off without the assistance of medicine. It was otherwise in the cases which Dr. Withering saw. In ten or fifteen days from

him, the scarlatina terminated in an intermitting fever, which was removed by the bark.

* These symptoms indicate a tendency to dropsy, as farther appears from the treatment found most successful in them. Diuretics and cathartics, De Haen observes, were sometimes serviceable, diaphoretics very rarely. The medicine chiefly recommended by Plenciz and De Haen, has for its principal ingredients calomel and squills. The cases mentioned by Dr. Withering often terminated in confirmed dropsy.

the

the termination of the fever, he observes, and when a complete recovery might have been expected, another train of symptoms often appeared, and frequently proved fatal. The patient complained of an unaccountable languor and debility, and a stiffness in the limbs, the pulse became frequent,* the sleep was disturbed, and the appetite lost, the urine was scanty, and the patient soon after fell into dropsy, which sometimes appeared in the form of ascites, sometimes in that of anasarca, and resisted all the usual means.

The train of symptoms mentioned by these writers seems to be only a greater degree of that condition of body which in almost all cases remains after the scarlatina, and gives rise to the more trivial dropsical affection which follows this disease.

Although the swelling of the parotids has not previously appeared, it sometimes supervenes with the anasarca, and even goes on to suppuration. The reader will

* Some of the other authors just mentioned remark that the danger was greatest when fever supervened.

find

find cases of this kind mentioned by Bang, who observes that epileptic fits sometimes both precede and follow the dropsical swellings. De Meza also says, that during these swellings he has seen both children and adults seized with epilepsy, which did not however prove dangerous, and seemed generally owing to exposure to cold, or some error in diet.

Death seldom happens at a very early period of the scarlatina. Where the symptoms run high and the eruption appears on the first or second day, the patient is sometimes carried off on the fourth or fifth, in other cases seldom sooner than the eighth or ninth day, and often later. "The length "of the disease," Dr. Clark observes, "was "uncertain; there was seldom any sensible "crisis, some soon recovered, others had "no favorable signs till the twelfth or six-"teenth day. Five only that I attended "died before the eighth, four on the ninth, "and in all the other cases that proved fatal "the patients protracted their miserable "existence to the thirteenth, fifteenth, six-

teenth,

" teenth, seventeenth, and sometimes to the " nineteenth day of the disease."

It may be observed upon the whole, that the true scarlet fever is a very mild disease. It is only in proportion as it partakes of the nature of the cynanche maligna that it becomes dangerous. In collecting the prognosis, therefore, the symptoms shewing a tendency to the cynanche maligna particularly demand attention. These I shall recapitulate, contrasting them with the corresponding symptoms of the mild scarlatina. They are not only of consequence in determining the prognosis, but of the first importance in regulating the treatment of the disease.

If the scarlatina makes its attack with only a degree of lassitude, languor, dejection of spirits, and shivering, the disease promises to be less dangerous, and to approach less to the nature of cynanche maligna, than when, along with these symptoms, the patient is troubled with anxiety, nausea, and vomiting.

If the internal fauces are of a florid colour, and considerably swelled, with difficult

cult and painful deglutition, the prognosis is better, than when they appear of a dark red or purple colour, without swelling, the deglutition being easy and attended with little or no pain.

If the specks, which appear about the tonsils, velum pendulum, and uvula, be of a whitish colour and are not soon changed into ulcers, the disease is more favorable, than when they are of an ash or brown colour, and become ulcerous at an early period.

When there is no running from the nose, or such as produces no excoriation, the prognosis is better, than when a thin acrid and fetid secretion runs from it.

It is also a sign of the mildness of the disease to be unattended with purging, and of great danger when the purging excoriates the anus.

When the pulse is strong and full the complaint is less dangerous, than when it shows a tendency to become weak and irregular.

When the patient bears the complaint well, and without much loss of strength, his

his situation is more favorable than when he is restless and debilitated.

When the mental functions remain unaffected, the prognosis is better than when delirium or coma supervene.

If the eruption is delayed till the third or fourth day, the disease is safer than when it appears on the second. When it appears on the first day the prognosis is generally bad.

When it is universal, every part of the body becoming uniformly red, the prognosis is better than when it comes out here and there in stains or blotches, or in small points.

When its appearance is followed by a remission of the symptoms in the throat, the prognosis is more favorable than when the affection of the throat increases. A tendency to swelling in the neck, hands, and feet, and the eruption being less considerable on the trunk than extremities, add to the unfavorable prognosis.

The same may be said of the eruption appearing unsteady, and the fever not remitting at the period of desquamation.

Glandular swellings also are unfavorable symptoms.

When the dyspnœa is considerable, without much swelling about the throat, there is reason to apprehend that the inflammation has spread to the trachea, which is always an alarming accident. The inflammation also sometimes extends along the œsophagus to the stomach, or along the eustachian tube, occasioning acute ear-ach.*

Hemorrhagies in general are unfavorable, unless at an early period and when the excitement is considerable. Bloody saliva† in particular denotes an unfavorable state of the fauces.

All anomalous consequences of the scarlatina are to be dreaded.

SECT. II.

Of the Causes of the Scarlet Fever.

THERE is no mention of the scarlet fever in the works of Hippocrates; nor do we find it mentioned as a distinct disease by

* See Withering on the Scarlatina.

† See Plenciz' Tractatus de Scarlatina.

any

any other of the Greek or Roman writers. Some of them have taken notice of a scarlet rash as an accidental occurrence in fever, but not as marking a distinct genus.

Prosper Martianus, an Italian physician, is among the earliest writers on this complaint. He gave an account of the scarlatina as it appeared at Rome about the middle of the seventeenth century. It soon after made its appearance in London, and was described both by Sydenham and Morton, who term it Febris Scarlatina. They met with it however under different forms. Sydenham describes it in its mildest state. Morton met with many instances, in which alarming symptoms appeared, and which, as was hinted above, varied in some respects from the ordinary course of the disease; but he did not always distinguish very accurately between measles and scarlatina. The disease described by Prosper Martianus resembles that described by Sydenham.*

* The scarlet fever which Morton describes prevailed in the same year in which Sydenham died, which is the reason we do not find it mentioned by the latter.

Since the days of these writers the complaint has been described by a variety of authors. This disease, De Haen observes, was hardly known in the sixteenth and seventeenth centuries, but has appeared very frequently in the present.

The cynanche maligna, so much connected with the scarlatina, is said to have made its first appearance about the year 1610 in Spain, where it is called Garrotillo. From Spain it soon spread to other countries of Europe. It appeared in Naples in 1618, where it raged for twenty years, destroying great numbers. If we compare the accounts of these epidemics with what Sydenham and Prosper Martianus say of the scarlatina, we shall be inclined to believe that this fever and the cynanche maligna, on their first appearance were more distinct diseases than we now find them to be.

It appears from the history of the scarlatina, that its exciting cause is a specific contagion. Concerning its predisposing causes little has been determined. It has only been ascertained that children are more subject to it than adults, and those of a lax habit

habit of body than the more robust. Females have generally been supposed to be more liable to the scarlatina than males. Many more of the female than of the male sex, Dr. Sims observes, were seized with the scarlatina anginosa. It seemed particularly fatal to girls from two to eight years of age. He saw but one child at the breast who had the complaint, and that but slightly. Dr. Fothergill also observes, that women are more subject to it than men. This however is contradicted by the observations of Dr. Clark.* And some have even doubted whether young people are more subject to the scarlatina than adults. Bang asserts that all under thirty are equally subject to it. But whatever may have happened in the particular epidemics which he saw, it has been well ascertained, that those under puberty are most liable to this disease.

The scarlet fever, Sydenham observes, may appear at any season of the year, but it most frequently shews itself about the

* See Dr. Clark's Table of Patients labouring under Scarlatina received into the Newcastle Dispensary.

end of summer. Fothergill and others make the same observation. It is sometimes checked by a severe winter. Dr. Sims remarks that he has seen it wholly at a stand during some days of sharp frost, after which however it seemed to recover new vigour. It generally disappears in the spring, but has been known to continue for several years, and consequently has withstood the different seasons.

Physicians have endeavoured to ascertain the circumstances which determine the severity of this disease. "The remote "and external causes," Dr. Clark observes, "which had the most obvious influence in "rendering the epidemic malignant, may "be reduced to the three following, name-"ly, the heat and moisture of the air, and "effluvia arising from many persons being "crowded together in the same house, or "often in the same room."

The constitution of the patient has a considerable effect in rendering the disease mild, or otherwise. I have seen it at the same time assume all its various appearances in different individuals of the same family.

But

But what circumstances in the constitution render the disease mild or otherwise, have not been ascertained. We have reason to believe that it is most severe in the debilitated and the plethoric. In the latter I have known it assume its worst form, while in others similarly circumstanced it proved very mild.

Respecting the means of prevention, there is nothing to be added to what was said when speaking of contagion in general.*

It has been asserted by some, that the scarlatina never attacks the same person a second time. Bang and others declare they never knew this happen. More extensive observation has contradicted this opinion. It appears however that the scarlatina properly so called, namely, that in which the eruption is complete, is less

* Dr. Sims says, he found rhubarb given in small doses, so as to support a moderate catharsis, a good preventive, while the scarlatina anginosa raged. He also thought it was useful in moderating the ensuing disease, when given between the period of infection and the commencement of the complaint.

apt to attack the same person a second time, than that in which the eruption is imperfect and the affection of the throat considerable. The recurrence of the true cynanche maligna in the same person has not been questioned; although there is reason to believe that this complaint also is less apt to attack those who have formerly laboured under it. It is observed in the Edinburgh Medical Essays, that such as formerly had had scarlet fever without sore-throat, were now attacked with the sore-throat without the eruption; those who had formerly had the sore-throat, now had the fever and eruption without any affection of the throat. All the others had both the eruption and sore-throat. There are even instances in the same epidemic of the same person having the disease first in the one form, and then in the other.

SECT. III.

Of the Treatment of the Scarlet Fever.

AS the treatment of small-pox was divided into that of the distinct and that of the confluent

confluent form, and as the treatment in measles was divided into that of regular and that of irregular measles, so the treatment of scarlatina may be divided into that of simple scarlatina, and that of the scarlatina cynanchica.

It is unncessary to enter particularly into the treatment of the former; it differs little from that of a mild synocha, and consequently little from that of the distinct small-pox or regular measles. The particular nature of the complaints, however, points out some difference in the treatment of even the mildest cases of small-pox, measles, and scarlatina, which is not to be overlooked.

In the small-pox, the application of cold can hardly be too free; in the scarlatina, from the greater tendency to inflammatory affections, it requires more caution. Any sudden or partial application of cold in measles is still more precarious, the catarrhal symptoms always demanding particular attention, which is not the case either in the distinct small-pox or simple scarlatina.

As the fever in distinct small-pox ceases when

when the eruption is completed, and as the application of cold is very free, other antiphlogistic measures are less necessary than in the measles and scarlatina, where even in mild cases the fever usually does not cease while the eruption is out, and an equally free application of cold is inadmissible. Besides, the greater tendency to inflammation in the measles and scarlatina, enforces the necessity of an attention to the antiphlogistic plan; and as the measles are most apt to be accompanied with or followed by visceral inflammation, in this complaint a strict attention to the antiphlogistic regimen is least dispensable; yet on this very account the more powerful antiphlogistic means, blood-letting or much purging, are to be employed with greater caution at an early period, than in either small-pox or scarlatina, because visceral inflammations supervening when the strength has been reduced, very frequently prove fatal.

With regard to the treatment of the scarlatina cynanchica, as this form of the disease may be regarded as a combination of the

the simple scarlatina and cynanche maligna, its treatment cannot be understood without being acquainted with the treatment of the latter complaint. For the treatment of the scarlatina cynanchica therefore, I must refer to what will be said of the treatment of cynanche maligna in the next volume.

CHAP. V.

Of the Plague.

THE Plague is defined by Dr. Cullen,

"Typhus maxime contagiosa. Incerto "morbi die eruptio bubonum vel anthra- "cum."

Although few British physicians have occasion to practise in the plague, the propriety of being acquainted with a disease, which has demanded so much attention, and bears so strong an analogy to complaints which every day fall under their care, is too apparent to require any comment. Besides, we cannot foresee in what circumstances we may be placed; and for a physician

physician to betray ignorance of the plague would be unpardonable.

There are few diseases so remarkably varied, and there are few, perhaps none, of which it is more difficult to give an account, which shall be at the same time sufficiently full and distinct. The reader will find the best writers, who have had an opportunity of seeing the disease, complaining of this difficulty.

As much as possible to prevent confusion, they have divided the plague into different classes; nor is it possible without this to give a just view of the complaint, since no two diseases are more opposite than the different forms of the plague. In one we shall find it the most dreadful of all fevers, destroying without exception all whom it attacks; in another we shall find it consisting chiefly of an eruption unattended by danger. Why, it may be said, are diseases so different, regarded only as varieties of the same? However different these extremes, they are not only produced by the same specific contagion, but almost insensibly run into each other; from which we may

may form some idea of the variety which the plague presents. It will not then appear surprising that the difficulty of arranging its symptoms, so as on the one hand to avoid confusion, and on the other to give a comprehensive view of the complaint, be very great. In fact there is no author, although most of those who have written on the plague speak from their own observation, who has overcome this difficulty. In all we find the account either short, and consequently more or less imperfect, or of considerable length and more or less confused. So varied are the symptoms of the plague, that if the common varieties are given, the account must be tedious, and then it is impossible perhaps to prevent it being in some degree perplexed.

I shall not spend time by laying before the reader the modes of division adopted by different writers, or by pointing out the objections which might be made to them. The objections consist chiefly, in many of the divisions not being marked with sufficient precision, so that it is often impossible to say what are the corresponding divisions in

in the different accounts of the disease; as the reader will perceive if, for example, he compare together the different accounts of the plague in the Traité de la Peste, or any of these with the division adopted by Dr. Russell in his Treatise on the disease.

In dividing a disease into varieties, each variety must be marked by some symptom which constantly attends it. This symptom must not be accidental or unconnected with the state of the symptoms in general, which would render the division useless; but must mark a variety, in which the symptoms on the whole, and, what renders the division of more importance, the prognosis, differ from those of other forms of the complaint.

I shall not defer a particular account of the eruptions, namely, the buboes, carbuncles, &c. till after the different forms of the disease have been considered, as has usually been done; by which we are forced to use terms before they have been defined; nor on the other hand, is it proper, where the variety is so great, to interrupt the account of the general course of the disease, in order to describe the different eruptions. It therefore

therefore appears necessary to depart from the order which has been pursued in laying down the symptoms of the other exanthemata, and to regard bubo, curbuncle, &c. as terms which must be defined, before proceeding to give the symptoms of the plague.

SECT. I.

Of Pestilential Eruptions.

1. OF Pestilential Buboes.

A pestilential bubo at its commencement is a small, hard, round tumor, readily perceptible to the touch, about the size and shape of a pea, it is moveable under the skin, the appearance of which is not altered at an early period, the bubo lying at a greater or less depth, and the swelling not appearing externally.

As the tumified gland enlarges, it changes from a round, to an oval, shape, becoming at the same time less moveable. The integuments now begin to thicken and the swelling to appear externally.

The

The appearance of the bubo is often preceded by a sense of tightness and pain sometimes lancinating, or itchiness, in the part where it is about to appear, now and then by shivering. In many cases however, the small swelling just described comes on without being preceded by any peculiar symptoms.

Some buboes are indolent and insensible, others very sensible and rapid in their progress. The tumor advancing quickly to suppuration, is generally regarded as favorable. When the buboes suppurate properly, De Mertens observes,* and there is a separation of eschars from the carbuncles, with a remission of the febrile symptoms, the prognosis is good. No general rule however can be laid down. Cases where early suppuration takes place often prove fatal; and there are many histories of cases terminating favorably where the buboes were extremely indolent and terminated in resolution.

It is difficult to foresee in what way a bubo will terminate. The fluctuation is

* See his Account of the Plague of Russia.

often

often scarce perceptible where suppuration has taken place, and buboes are sometimes resolved after fluctuation has been very evident. Their progress indeed is almost always more or less irregular, especially after the first week. At one time they seem advancing to suppuration, at another show a tendency to resolution. "But these variations," Dr. Russell remarks, "chiefly respected the integuments; for the gland "itself when carefully explored was seldom "found to alter, and where the tumour actually dispersed, it was not suddenly, but "by slow degrees. Thus from the alteration in the teguments alone, the whole "tumour, on a superficial view, seemed to "lessen or increase, though the gland remained the same; and I am inclined to "think that this deception was often the "cause of the bubo being said to fluctuate, "or to vanish in appearance entirely, and "again return." He adds however, "At "the same time I am far from thinking "that this fluctuation was never real." And Chenot * observes, "Vidimus quoque

* See his Treatise on the Plague.

" abruptam suppurationem in his resuscitari " ac demum per effusionem puris absolvi."

The bubo as it increases in size becomes somewhat flat; and generally about the second week, the skin over it grows tense and painful, and begins to be inflamed. In some cases the inflammation is moderate, in others considerable; but it seldom terminates in gangrene, although the skin now and then assumes a bluish colour.

It sometimes happens however, that the bubo runs to suppuration without any degree of inflammation appearing on the skin, and then, as it is generally harder than a suppurated venereal bubo, it is often difficult to determine whether suppuration has taken place or not. When buboes break spontaneously, it generally happens in the third week, sometimes at a later period.

The buboes most frequently appear in the groins or a little lower, among the lowest cluster of the inguinal glands; they also frequently appear among the axillary glands; sometimes, though more rarely, they have their seat in the parotid, and the disease is then by many reckoned more dangerous than

than when the buboes appear in the groins or armpits. Still more rarely they appear in the maxillary or cervical glands.

" The latter two," namely the maxillary and cervical glands, Dr. Russell remarks, " were seldom observed to swell without " either the parotid swelling at the same " time or soon after, or a carbuncle pro- " truding near them; they never were the " sole pestilential eruptions, and I recollect " few instances of their coming to matura- " tion." It has been remarked by others, that the parotid bubo seldom appears unaccompanied by one or more in the axillæ or groin.

It may upon the whole be observed, that the axillary buboes suppurate more frequently than those situated about the fauces, and the inguinal more frequently than the axillary.

Buboes often make their appearance on the first day of the complaint; sometimes indeed they are among the first symptoms. It has been observed, that when they appear later than the third or fourth day, they are generally preceded by an exacerbation

of the febrile symptoms. Those which come out at so late a period, however, are not, for the most part, the first which appear in the course of the complaint; for a succession of buboes sometimes takes place, till three or four have made their appearance. In this case several hours usually intervene between the appearance of any two of them.

It sometimes happens that no buboes appear, and these cases are upon the whole the most fatal. This is a circumstance which particularly demands attention, as the cases unattended by buboes and other pestilential eruptions generally make their appearance at the commencement of the epidemic, and have often, in consequence of the absence of the eruptions, been mistaken for other complaints. In other cases, particularly towards the decline of the epidemic, the buboes and other eruptions often form the principal part of the complaint, which is then unattended by danger; from which it would appear, that the eruptions in the plague are to be regarded as favorable symptoms;

symptoms; but of this I shall presently have occasion to speak more particularly.

Where the inflamed gland advances to suppuration more rapidly than the integuments, troublesome fistulous ulcers are sometimes formed, if an artificial opening has not been made in the skin. This accident however is rare; in general the buboes, left to themselves, do not prove troublesome.

When they do not suppurate, and the patient recovers, they gradually disperse, generally in the space of a few weeks. In some cases they are succeeded by an induration of the gland, which remains for many months. Even where suppuration has taken place, if the cure proves tedious, either in consequence of the matter having been discharged by too small an opening, or the opening having repeatedly closed in the progress of the cure, a similar induration sometimes succeeds, which in like manner sooner or later disappears, these indurations never terminating in cancer.

Such are the circumstances to be learned from attending to the external appearances of

of the buboes; some further circumstances, of less moment however, have been ascertained by dissection.

It has been the practice of many, particularly the French surgeons, to extirpate the buboes; which gave them an opportunity of observing the internal changes which take place in them. From the appearances on dissection they have been divided into several different species. It is unnecessary to detain the reader with an account of this hitherto useless division; he will find it at length in the Traité de la Peste from the 428th to the 434th page. One observation deserves attention; it has just been remarked, that the skin covering the buboes never runs to gangrene; dissection shows that it is otherwise with respect to the gland itself. "Je coupai par le mi-"lieu celle (h. e. the bubo) qui etoit sur les "vaisseaux, que je trouvai toute noire." "Le lendemain j'ouvris le bubon, j'y trou-"vai le corps glanduleux comme un rein de "mouton, tout noir."*

* See Traité de la Peste, p. 447, 448.

Besides

Besides the true bubo, another pestilential eruption has also received the name of bubo. This eruption is so rare that some who mention it have been accused of misrepresentation. This accusation we are now assured is groundless.*

The principal circumstance in which the spurious, differs from the true, bubo, is in the former appearing indiscriminately on almost every part of the body, while the true bubo is confined to the groin, axilla, and parts about the fauces. "Spurious bu-" boes were observed," says Dr. Russell, " on the head, the forehead, the throat, the " shoulder, above the clavicle, the neck, " on or above the scapulæ, the back, the " side under the breast, the belly, the hip, " hind part of the thigh near the ham, the " leg, the scrotum, the arm near the usual " place of issues, inside of the arm near " the elbow, outside of the forearm, and " near the wrist."

Some of these buboes, if they are not lanced at a proper time, grow to a great

* See Dr. Russell's Treatise on the Plague, p. 119.

size, particularly those on the scapulæ or back; in other parts however they seldom much exceed the size of a common hen's egg. They generally make their appearance about the second or third day, and for the most part after the protrusion of true buboes or carbuncles. They generally suppurate, though less rapidly than the true buboes.*

2. Of Carbuncles.

Next to buboes, carbuncles are the most remarkable of the pestilential eruptions.

The reader will find carbuncles divided by different writers into several varieties. One makes three, another four, a third five different kinds.

Dr. Russell divides the carbuncles he met with, into five varieties.

The first appeared in the form of a small pustule about the size of half a pea, on its upper surface of a dusky or yellow colour, and a little wrinkled. The skin which immediately surrounded this pustule was hard

* See Traité de la Peste, part 1st, p. 435.

and

and inflamed. The pustule itself soon became very painful and continued to increase till it became a tumor of the size of a nutmeg, and sometimes that of a walnut; and a yellowish matter was secreted under the cuticle, which was sometimes moist, at other times dry and crusty; the rest of the tumor assumed a dark reddish colour, the circle which surrounded it appearing at different times of various hues.

On the third, fourth, or fifth day of the carbuncle, a gangrenous crust appeared on the middle of it, which soon occupied the whole surface of the tumor, exactly resembling the black eschar formed by caustic.

This crust, when the termination was favorable, was thrown off by suppuration, leaving an ulcer of various depth, which for some time continued to discharge matter. When the case terminated fatally, the crust remained dry and often spread to the inflamed circle, surrounding the carbuncle, so as to form a gangrene of considerable extent.

The second kind of carbuncle appeared in the form of a small angry pustule, not rising

rising so high as the former, more disposed to spread, and becoming gangrenous on the second day. In this state it was not easily distinguished from the other, but was generally surrounded with a more highly inflamed ring. It chiefly attacked tendinous parts, particularly the joints of the fingers and toes.

In the third variety, the cuticle was at once raised into a blister of the size of a horse bean, filled with a dusky yellow or blackish fluid, and the skin which surrounded this variety of the carbuncle, was less tense and of a paler red, than that surrounding either of the foregoing. When the blister broke, the cuticle fell upon the flat surface, which was of a dark colour and soon became black. At this period, that is about the third or fourth day of the carbuncle, it resembled the preceding varieties, except that it was flatter. The circle surrounding the eschar gradually assumed a very dark red, but never became gangrenous. The eschar was about the size of a six-pence. This carbuncle was very

very painful, and five or six sometimes appeared on the same patient.

The fourth variety was a small red spot raised only to the touch, which gradually rose higher and spread, till in 24 hours it was a flattish dusky pustule, surrounded by a light rose-coloured margin. This carbuncle was very painful, and when it appeared on the face occasioned swelling but without inflammation of the skin. It often became black beyond the rose-coloured margin on the second day, and the mortification spread to the neighbouring parts. This species of carbuncle always accompanied other eruptions, and was usually pretty numerous.

The fifth and last variety appeared at first a pustule, which, on the second day, resembled that of the small-pox; it rose in the form of a cone to twice the size of a large distinct pock with a blunt yellowish point, which, instead of advancing to suppuration, became black to the size of a large field pea. The gangrene in this case however did not spread farther. The margin became of a dusky red, but appeared brighter as the

the suppuration which threw off the eschar advanced. After the second day, this differed from the third and fourth varieties only in the gangrenous part being of less extent and the pustle more raised.

In other writers we find an account of carbuncles in some respects differing from the foregoing. Samoilowitz, in his Account of the Plague of 1771 in Russia, observes, that the petechiæ or maculæ are very large and confluent, and often turn to carbuncles a short time before death, which happens in the following manner: two, three, or four large petechiæ run together and form a large pustule; sometimes a similar pustule arises on each petechia; in either case, on opening the pustules a true carbuncle appears beneath. In the Traité de la Peste, it is observed of a plague which raged in the eastern parts of Europe, that purple spots appeared on various parts of the body, in the middle of which arose small gangrenous tubercles.

In the same publication, Geoffry takes notice of a carbuncle, no part of which assumed a black appearance. Dr. Russell, however,

however, thinks that Geoffry describes its appearance at one period only.

Dr. Gotwald describes a carbuncle, which on its first appearance was a small swelling, on the surface of which there soon arose a number of little vesicles in clusters, which in a short time were formed into an eschar. These carbuncles were generally situated in membranous and tendinous parts, about the knee, behind the ears, upon the toes, &c. A streak proceeding from carbuncles on the fingers has sometimes been observed and compared to a tail.

Dr. Hodges mentions an eruption of vesicles, which in one case he found covering the whole body. When the inflammation was considerable, they sometimes became gangrenous, and were changed into carbuncles; they then resembled Dr. Russell's third variety.

There are certain eruptions which now and then appear in the plague in some respects differing considerably from any of the carbuncles just described; in others resembling them. Such is the eruption which has been termed papulæ ardentes, or fire bladders.

bladders. Gotwald, (says Goodwin in his Historical Account) observed the papulæ ardentes or fire bladders in two patients only, both of whom recovered. They were as broad as a shilling, of an irregular shape, and the skin seemed as if it were shrivelled by fire; at length they emitted a small quantity of moisture, and vanished in a few days. They appeared on the belly, thighs, and legs.

But it would be tedious to enumerate all the various eruptions of this kind which have been observed in different epidemics. The true pestilential carbuncle may be defined, a pustular or vesicular eruption, sooner or later running to gangrene.

The eruption called anthrax, is nothing more than a carbuncle after it has become sphacelated.

Carbuncles, to whatever variety they belong, for the most part do not exceed the size of a walnut; they have sometimes been observed considerably larger. The time of their appearance is uncertain; they sometimes shew themselves on the first day of the complaint, but more commonly not

not till a later period; and when several appear on the same person, they generally succeed each other rapidly. They have been known to come out as late as the eighteenth or twentieth day.

Respecting the number which appears on the same patient, Dr. Russell observes, "Of "those of the first and second species seldom "more than one or two were observed in the "same subject, in general one only. The "other varieties occurred in greater number, "and including those of the fifth, I have "sometimes counted between twenty and "thirty, but this happens very rarely."

This eruption is always attended with considerable pain, which in some cases is very violent. No external part of the body is exempted from carbuncles. "I have "observed them every where," the author just quoted remarks, "the penis and scro-"tum not excepted, but never observed "them on the tongue, the tonsils, and in-"ternal parts of the mouth, (there have been instances however of their appearing on the tongue) though in carbuncles on "the cheek, near the corner of the mouth, the

" the gangrene spreads inwards, and in on
" instance of a carbuncle on the eye-brow,
" the gangrene spreading upon the globe of
" the eye had destroyed part of it."

The carbuncle is a less favorable eruption than the bubo. Carbuncles were regarded by the Russian physicians, Dr. Guthrie informs us, as a sign of greater malignity than buboes; but of this presently. They thought the carbuncle indicated less danger when red than when livid; when it suppurated than when it did not. When the hands and feet were the seat of carbuncles, Dr. Guthrie observes, the patient seldom or never recovered. Carbuncles on the spine were also regarded as particularly unfavorable.

It is remarked, in the Traité de la Peste, that in those cases in which little or no eruption appeared, and in which the patients died on the fourth or fifth day, some of the viscera were generally found much affected, the intestines, chiefly the small intestines, the mesentery, the liver, the internal parts of the stomach or the lungs, being eroded,

or

or having large pustules or gangrenous spots formed on them.

Carbuncles and buboes often appear separately; they are also frequently combined, and when this happens, it has been remarked, that the carbuncles most frequently appear on the same side of the body with the buboes. This however is far from being universally the case. The carbuncle sometimes comes out very near the bubo, but rarely upon it. Dr. Guthrie observes that carbuncles sometimes appear on the buboes.

Carbuncles now and then give rise to buboes, for it frequently happens that when the former appear on the arm, the glands of the axilla swell; these have been observed to be less painful than primary buboes, and they disperse when the carbuncles come to a favourable suppuration; which is not the case with primary buboes. These lymphatic buboes, as they have been termed, are also observed, but much more rarely, in the groin when the carbuncles appear on the thighs, legs, or feet.

Such are the eruptions which chiefly

distinguish the plague. There are some others however which occasionally attend this disease.

3. Of the other Pestilential Eruptions.

Common boils or furuncles, as they have been called, appear more rarely than buboes or carbuncles. They are protruded suddenly, and are very much like the pustule which precedes some kinds of carbuncles, but considerably larger. They soon rise to a point, suppurate, and discharge good matter.

From what has been said of petechiæ, the reader will not be surprised to find this eruption in so well marked a typhus as we shall find the plague usually is. They are not however a constant attendant. In some epidemics they have been rarely observed, in others more frequently. It is chiefly this eruption which has been called tokens; by some, God's tokens; but these names have not been used in a very definite sense.

The appearance of petechiæ in the plague adds to the unfavorable prognosis. By the Russian

Russian physicians they were regarded as a very fatal symptom.

I need not say much of the different classes into which, from their different appearances, they have been divided. At one time they appear red, afterwards becoming brown, or even black; in other cases they are brown from the first, and become black sooner. In some cases they are few in number, and confined to the superior parts of the body, in others they are more numerous and appear on every part. They are sometimes small circular spots, at other times larger and of a more irregular shape. As in other fevers, the darker their colour the more danger they indicate.

Eruptions very different from petechiæ are mentioned under this name by writers on the plague. Thus Gotwald's fourth species of petechiæ is described in Goodwin's Historical Account as not unlike the eruption of measles. "In two or three days, it "is observed, they seem to rise to a head in "little blisters, but contain no matter; on "the fifth day they are dry, and then the "patient's death is not far off."

As in other malignant fevers, petechiæ often run together, forming blotches of various size and figure. Sometimes blotches appear without petechiæ properly so called, the skin being variegated with stains of different colours, so that it has been compared to the clouds and stains in marble. In different places it is blue, yellow, red, brown, black, of various shades and brightness. "The skin," Dr. Russell observes, "in various places was sometimes deformed "by narrow streaks of a reddish, purple, "or livid colour. When such took pos- "session of the face they gave a frightful "appearance to the countenance, and fre- "quently produced such an alteration of "features and so completely disguised the "patient, as to render him hardly known "by his acquaintance. A streak nearly of "the same kind was sometimes observed "darting from the edges of the buboes and "carbuncles."

Very often the stains or blotches do not appear till after death, and then, particularly on the fleshy parts, the body seems as if it had been bruised. "Sometimes," Dr. Russell

Russell continues, " the whole skin of the " thighs, back, and shoulders, turned livid " while the corpse was yet warm."

These appearances, he remarks, are not often observed at the commencement of the epidemic; which is to be regretted, as it is then that a characteristic mark of the plague is most wanted.

Such are the pestilential eruptions. In Dr. Russell's Treatise, the reader will find tables, giving the proportional frequency of the different kinds of buboes and carbuncles. The following are the results.

Of 2700, 1841 had inguinal buboes, 569 axillary, 231 parotid, 74 spurious buboes, 490 carbuncles. From these tables it appears that buboes in the right groin were more frequent, than in the left, 729 had the former, 589 the latter. In another instance, 161 the former, 130 the latter. Buboes were also rather more frequent in the right axilla, than in the left, though not in so great a proportion; 184 had buboes in the right, 165 in the left, axilla. In an other table the numbers of those who had them in the right and left axilla differed

only by one, and that was in favor of the left. Not above one in 10 or 12 had buboes in both groins or both axillæ.

The fourth table shews the number of cases in which buboes in the parotids, carbuncles or spurious buboes, were the sole eruptions, compared with that in which they were combined with inguinal or axillary buboes.

Buboes in the parotids in 130 were unattended, in 110 were attended, by inguinal or axillary buboes.

Carbuncles were the only eruption in 85 cases; they were combined with axillary or inguinal buboes in 405.

Spurious buboes appeared alone in 37 cases; they were combined with axillary or inguinal buboes in the same number.

In 143, inguinal and axillary buboes were variously combined. In 602 there was a complication of various eruptions.

It is to be remembered however that these proportions are drawn only from one or two epidemics, and will not perhaps apply with much accuracy to others; as the result of extensive experience however, they

they may serve upon the whole to give some idea of the comparative frequency of these eruptions.

SECT. II.

Of the other Symptoms of the Plague.

That I may abridge the following account of the symptoms of the plague, and consequently render it more distinct, it is proper to observe, that all the symptoms both of synocha and typhus occasionally attend this fever. It is unnecessary again to detail all of these, for which I refer the reader to the first volume; and shall here consider at length, those which characterise the plague, or appear in this disease under peculiar modifications.

It has already been remarked, that in the several divisions of the plague adopted by writers, many of the varieties are ill defined. They seem to be marked by accidental symptoms, and some of them by no particular symptom, but by the general mildness or severity of the disease. In the

former case the division can be of no use; in the latter it can admit of no precision. Besides, most writers on the plague, speaking from their own observation alone, describe the complaint as it appeared in one or two epidemics, and in almost all epidemics there are peculiarities. It is only by comparing many, that we can form an account of the disease generally applicable.

On comparing different epidemics we shall find, that whatever be true of other eruptions, buboes are salutary. They almost always mark a form of the disease less generally fatal, than that unattended by this eruption. "Those perished," Dr. Russell remarks, "sometimes within the twen-
"ty four hours, sometimes on the second
"or third day; they had neither buboes nor
"carbuncles, and it was very rare to find
"suspicious marks of infection on the dead
"bodies." In another place he observes,
"The total absence of buboes in those who
"died suddenly I have no doubt of." He also remarks, "That the plague, under a form of all
"others the most destructive, exists without
"its characteristic eruptions or other exter-
"nal

" nal marks reckoned pestilential, can ad-
" mit of no doubt." The Russian physicians, Dr. Guthrie informs us, found the cases attended with buboes less fatal than those attended with carbuncles. Carbuncles and petechiæ, De Mertens, in his Account of the Plague of Moscow, observes, are not critical eruptions, they only denote a putrid condition of the humours, whence it follows that in proportion as buboes are more common, and petechiæ and carbuncles more rare, the milder is the plague. Orrœus, in his Treatise on the same Plague, observes indeed, that buboes often attended the most acute form of the disease; yet in another place he informs us, that there were no buboes in the worst form, their germs only being sometimes observed after death; and Samoilowitz,* in his account of this epidemic, in describing the worst form of the disease, notices petechiæ and carbuncles as frequent symptoms, but makes no mention of buboes.

* Mémoire sur la Peste qui en 1771 ravagea l'Empire de Russie, surtout Moscow, par M. Samoilowitz.

Upon

Upon the whole then, the plague unattended by buboes, runs its course more rapidly and is more generally fatal, than when accompanied by this eruption. The plague may therefore be divided into that which is, and that which is not, attended with buboes.*

The first of these includes many varieties, from that in which the prognosis is almost uniformly good to a form of the disease little less fatal than that unattended by buboes. The appearance of the buboes also affords the means of subdivision, for it will be found, on comparing the accounts

* Some writers have divided the plague into three species; that attended with buboes, that attended with carbuncles, and that attended with petechiæ. It will appear, I think, from a very cursory view of the disease, that there is no room for such a division.

In some of the older writers we find plagues mentioned, in no case of which, it is said, any eruption appeared. This is said of a plague which raged in Europe in the 15th century. We have every reason however to believe, that these epidemics were not the true plague. That of the 15th century appears to have been of the same nature with the Sudor Anglicus.

of

of different epidemics, that upon the whole the earlier the buboes appear, the milder is the disease; thus, for example, in the first class of Dr. Russell's division, which was the most fatal, buboes were very rare; in the second, which was also very fatal, though less uniformly so, buboes appeared on the third day or later; in the third class, which was less fatal, they appeared earlier; in the fourth, which was still milder, buboes generally appeared on the first day; in the fifth, which never proved fatal, they were among the first symptoms of the complaint.

To the two foregoing forms of the disease a third might be added, since the pestilential eruptions towards the end of the epidemic sometimes appear unattended by fever. This form, however, which is merely a local affection unattended by danger, demands little attention.

The most fatal form of the plague makes its attack in various ways, sometimes merely with depression of strength, a sense of weight in the head, confusion of thought, giddiness, dejection, and oppression about the

the præcordia, often accompanied with a bitter taste in the mouth.* The patient is inclined to be silent, shews much anxiety in his countenance, but makes few complaints; the febrile symptoms are very moderate. The attendants suppose the patient a little indisposed, but suspect nothing alarming; yet such patients often die within the first twenty-four hours, sometimes on the second day.†

In general however this form of the plague makes its attack less deceitfully. In an epidemic described by Chenot,‡ that of Marseilles,§ and many others, the symptoms from the first were alarming, the complaint often appearing with violent and irregular shaking.

Delirium is sometimes the first symptom

* The bitter taste in the mouth the reader will find mentioned by different writers as characteristic of the plague. It is observed by some that a favorable change seldom happened while this symptom continued.

† See Russell's Treatise on the Plague, and Orrœus on the Plague of Moscow.

‡ See Chenot de Peste.

§ See the Traité de la Peste.

observed.

observed. At other times, a remarkable state of the pulse, which very suddenly becomes so weak that it can hardly be felt, frequent, and intermitting, with much debility and langour, introduces the disease. The prostration of strength is sometimes so sudden and complete, that Mr. Smith, Dr. Guthrie * informs us, saw men in apparent good health, on being infected by the plague, suddenly drop down as if shot by a musket ball. Sometimes, instead of mere debility and lassitude, the patient is affected with extreme horror and despair, and his spirits sink so low that nothing can recall them.

At other times, the disease attacks with very slight chills, soon followed by a burning heat, which remains during the disease; as soon as the heat commences, the patient complains of insufferable head-ach and excessive thirst. Sometimes, as in the plague of Russia described by Orrœus, the patient is suddenly seized with violent shivering

* See Dr. Guthrie's Observations on the Plague of Russia.

succeeded

succeeded by a hot fit, the shivering and hot fit alternating several times.

The first symptom of the plague is sometimes a violent beating of the temporal arteries, while the pulse at the wrist is small and feeble. In this case the heat is generally moderate, but the head-ach intolerable. In the plague which raged at Lyons in 1628, a burning heat in some of the viscera, and a dull pain or rather great heaviness of the head, announced its approach.

The plague sometimes comes on with violent palpitation, and strong convulsive tremblings. The plague which raged in London in 1665 often made its attack in this way.

As the complaint advances, it assumes more of the appearance of the fevers we have been considering. The inflammatory symptoms generally run high for the first day or two; but for the most part the plague assumes the form of typhus at an early period; and the patient soon becomes delirious or comatose.

The delirium is sometimes of the furious kind, particularly, Orrœus observes, in those

those of a robust and full habit, and in whom a full meal appeared to be the immediate exciting cause. In general however, the delirium is of that species which characterises typhus, the patient appearing rather stupid than outrageous, and complaining of a pain at the heart, a symptom frequently observed in the plague. When coma comes on early, it has been looked upon as affording a worse prognosis than delirium, particularly if it suffers no evident remissions during the day time. Both delirium and coma indeed are almost always most considerable during the night. The remission in the day time is generally more evident when the patient is delirious than when he is comatose.

Whether he becomes comatose or not, there is always present a very remarkable muddy appearance of the eyes, which is sometimes observable at the very commencement, and is one of the most characteristic symptoms of the disease. This appearance of the eyes in some degree resembles that in the last stage of malignant fevers. It is not however described as altogether such,

for

for with the muddiness there is blended a degree of lustre. It is an appearance in short very remarkable to those who have seen it, but not easily conveyed in words.

Chicoyneau observes of this appearance of the eyes, " Les yeux etoient ternis, le " regard fixe et egaré annoncoit la terreur et " le désespoir."* Chenot calls it, " Oculo- " rum languor et mæstitia ;" in another place, " occuli tristes scintillantes," which last may almost be looked upon as a translation of Dr. Russell's account of the eyes. The eyes, Orrœus observes, are unusually prominent and preternaturally red, watery, and of a sparkling fierceness, but in the advanced stage of the disease, they sink, the redness goes off, and a little before death, they appear dull and as if covered with a film. This change may be observed to a greater or less degree, during each remission, for it is in the exacerbations that the peculiar appearance of the eyes is most remarkable.

Almost all writers on the plague take

* Traité de la Peste.

notice

notice of a peculiar cast of countenance, which to those who are conversant with the disease, is one of its best diagnostics. It was the state of the eyes, Dr. Russell remarks, which contributed chiefly to occasion that confusion of countenance which he does not attempt to describe, but from which, after repeatedly observing it, he could with some certainty pronounce whether the disease was the plague or not.

The danger is very generally proportioned to the degree of this symptom. When the eyes resume the natural appearance, particularly when this happens after sweats, the prognosis is favorable, But in the form of the plague we are considering, this hardly ever happens. In the comatose the muddiness of the eyes is most remarkable. Their fierceness is most striking in those who labour under delirium, particularly the furious delirium; and it sometimes happens, that the coma and delirium, with the peculiar casts of countenance which accompany them, alternate with each other. In the delirious, however, there is still an appearance of muddiness, and the eyes retain

some lustre in the comatose. These appearances of the eyes are less remarkable in children than in adults. Such is the best account I have been able to collect from the observations of those who were conversant with the disease, of that peculiar appearance of the eyes which all who have seen the plague agree, so remarkably characterizes it.

The changes which take place in the eye are not always confined to its appearance only; the retina is sometimes much affected. The patients complain of seeing sparks, flashes of fire, and various colours passing before the eyes; this is only a greater degree of the symptoms termed muscæ volitantes. Deceptions of sight, however, are not frequent symptoms in the plague. Deceptions of hearing are still more rare. Deafness, as in other fevers, is generally a favorable symptom, but it seldom attends the plague. With respect to the other senses, nothing particular is to be observed. The depravation of the taste, which is in some measure characteristic of the plague, I have already had occasion to notice.

The

The anxiety in many cases is extreme, the patient constantly changing his posture, and soon finding the present as uneasy as the last, so that he is sometimes perpetually in motion. When this symptom is considerable, it affords a very unfavorable prognosis. The appearance it assumes when at its height, which generally indicates the approach of death, is described by authors, who have termed it a mortal inquietude, in very strong terms. The patient incessantly twists his body as if in agony, but is incapable of giving any account of his feelings, so that it is difficult to determine whether it is occasioned by a great degree of anxiety or severe pain.

The temperature, in the progress of the disease, is various. While the chills continue to recur, its increase is not considerable, and in the cases where it is most considerable, it seldom equals that which we often meet with in common synocha.

The state of the pulse is also various. In most cases after the first days of the disease, in many after the first hours, and in some from the commencement, it is

eeble and frequent. Sometimes it is remarkably hard and small but regular, at other times it is irregular or intermitting, and at length fluttering.

During the exacerbations, it often becomes full, open, and strong, as Dr. Russell expresses it; after which it again sinks; but in a more advanced stage, a different change is observed during the exacerbations, the pulse becoming so feeble that it can with difficulty be felt.

It has been observed of the pulse in the plague, that though to a slight touch it is strong and full, it is often easily compressed; a state of the pulse not readily accounted for, which is mentioned however by more than one author from their own observation.* The most striking fact relating to the state of the pulse in the plague is, that it has often been observed nearly

* In the Traité de la Peste the reader will find this state of the pulse mentioned both by Chicoyneau and Conzier. "Il etoit ouvert et animé." The former observes, "Il disparoisoit cependant si on pressoit l'artere avec le doigt.

natural

natural while the other symptoms indicated much danger.

As the disease advances the increase of debility is generally indicated by a considerable affection of the speech; in some cases amounting only to a degree of confusion and faltering, or a change of tone; in others the voice is greatly impaired or wholly lost. The affection of the voice appears the earlier, the greater the debility. When this is excessive from the beginning, when, as Chenot observes, "Ægri erecti stare aut "sedere impotes, proprio pondere labeban-"tur," a considerable affection of the speech is generally observed on the first night, or the second at farthest. When the debility is less considerable, it is delayed to the third day or later.

The state of the tongue, as in other fevers, is various. It often retains the natural appearance throughout the greater part of the disease. Sometimes it is moist, and covered with thick mucus, at other times dry. "Sometimes," Dr. Russell observes, "it be-"came parched with a yellow streak on "each side, and reddish in the middle, but

" it never was observed to form so thick a " fur or become of so dark a colour as in " the advanced stages of some other fevers. " The dryness or moistness of the tongue," he adds, " rarely corresponded with the " febrile symptoms, for the tongue was " often moist where the external heat was " intense and the pulse indicated high fe- " ver; and on the contrary, parched where " the fever in appearance was very incon- " siderable."

Vomiting, though more frequently observed in less violent forms of the plague, sometimes attends this variety. The pain at the heart, so frequently complainted of, Dr. Russell thinks situated about the orifice of the stomach. As it often accompanies vomiting, he was at first led to believe that it arose from bile or other irritating matter in the stomach. He found however that it was not relieved by the discharge. It seems more than probable, from the nature of the symptoms, that this pain proceeds from an inflammatory affection of the stomach. The matter evacuated by vomiting is generally bilious. It is sometimes

of

of a dark colour and mixed with blood; and it is not uncommon in the plague for worms to be thrown out by vomiting. Whatever be the appearance of the matter rejected, when vomiting occurs at an early period and returns at intervals, the prognosis is bad.

Nausea without vomiting is a frequent symptom. It does not seem to proceed from irritating matter in the stomach, as repeated vomiting is not found to relieve it. There are few means more effectual for allaying nausea and vomiting than those which promote the perspiration. It has been observed of the plague, that if the repeated reaching occasions a moisture on the skin, the nausea abates.

A diarrhœa is apt to supervene, sometimes during the first days, more frequently at a later period. This is invariably a dangerous symptom. The matter passed by stool is similar to that rejected by vomiting, often bilious, frequently with an evident admixture of blood; sometimes blood only is passed. Chenot often met with dysenteric purging in the plague.

As there are few fevers in which purging is so unfavorable, so there are none in which constipation appears to be less injurious. "A number of the sick," Dr. Russell observes, "were disposed to be costive "throughout the disease, and some had no "stool for several days, the popular dread "of provoking a diarrhœa proving a bar to "laxatives and even to simple clysters, "which are readily admitted at other times. "The consequences of this sluggishness of "the bowels were by no means what might "have been expected, for on comparing a "number of cases in which the body had "been all along regular, with others in "which there had been no stool, the former "did not appear to have been particularly "exempt from those symptoms which might "plausibly have been imputed to costive-"ness in others."

The urine is often observed in no respect different from that of a person in health; at other times it is found pale, high coloured, clear, turbid, without sediment, or with a great deal, and sometimes more or less tinged with blood; in short, it assumes in different

different patients, or sometimes in the same at different times, all the various appearances observed in other fevers.

There is no excretion of such consequence in the plague as that by the skin. When the skin remains parched, or when only slight, clammy, partial sweats appear, the prognosis is bad; when on the other hand a thin, general, and copious sweat takes place, it often proves more or less critical.

Dr. Russell observes, that the breath and perspiration were seldom or never fetid. Other writers however have observed that they are often fetid to a great degree.

As in many, perhaps in all the other exanthemata, epileptic fits now and then occur. They are a rare symptom in the plague. When they appear, they generally precede an eruption.

Slight convulsive motions of the limbs and subsultus tendinum are frequent; with respect to other convulsive motions, hiccup rarely, and sneezing almost never, attends the plague.

Hemorrhagies are a common symptom, and unless very moderate, generally indicate much

much danger. They are frequent, as appears from what has been said, from the stomach, intestines, and kidneys. They are more common however from the nose, and in women from the uterus, than from other parts. These, particularly the hemorrhagy from the nose, when they occur early in the disease, and the patient is young and plethoric, sometimes bring relief. At a later period, hemorrhagies are always unfavorable, and when they become profuse, the patient seldom recovers. It has been remarked, as might have been inferred a priori, that the blood which flows in these hemorrhagies is thinner in proportion as the disease is further advanced.

Such are the symptoms of the worst form of the plague. The strength gradually sinks, till the pulse impresses the finger with only a weak, undulating, or tremulous motion, with frequent intermissions. The surface, particularly on the extremities, becomes cold and covered with clammy moisture, the pulse cannot be felt, and the patient calmly expires, or, as frequently happens

happens in all idiopathic fevers, is carried off by convulsions.

The second and more common form of the plague, that accompanied with buboes, includes endless varieties. What I am about to say of this form, may be divided into two parts; the circumstances in which it differs from the preceding form, and those in which its principal varieties differ from each other. In the first place, of the circumstances in which this form differs from the preceding.

In the second form of the plague, according to the division I have adopted, buboes always make their appearance on the first, second, or third day, or later. If we except the appearance of buboes, we shall find no symptom constantly attending the one, and never present in the other, form. There are certain symptoms however more frequent in the one than the other.

Both vomiting and diarrhœa are most frequent in cases where buboes are about to appear. They sometimes attend from the commencement; at other times supervene at a later period. When the vomiting

ing and purging commence early, they often continue to harrass the patient through a great part of the complaint.

Although the delirium and coma are sometimes as uniform in this, as in the preceding form of the disease, it is not generally the case. In most instances indeed, some degree of these affections comes on in the evening, and continues through the night, but in the majority of cases, unless the disease is far advanced, the patient during the day is nearly and sometimes altogether free from them. The sudden depression of strength also is upon the whole less remarkable, and the pulse for the most part continues longer full, and is less apt to become irregular.

The duration of the complaint upon the whole is longer, petechiæ and vibices are more common, and the body more frequently becomes livid and black after death. In short, the difference between the general course of the symptoms in the first and second forms of the plague, is, that in the latter they are upon the whole less alarming and more protracted, the patient often labouring

bouring under various symptoms for some days before the fever is formed.* In the danger and rapidity of the second form however there is great variety; it varies from a degree of severity nearly equal to that of the first form, to a degree of benignity approaching to that of the last, in which the eruptions are unaccompanied by fever.

Although the varieties of the second form are in reality endless, there are only three which can be distinctly marked, for (notwithstanding the numerous divisions of authors) I can discover no symptom which characterizes different gradations included under any one of these varieties; and varieties ill characterized, instead of rendering the subject clearer, increase its perplexity, by holding forth distinctions which, the reader soon perceives, nature has not made. Surely vomiting occurring more or less frequently, or coma supervening at an earlier or later period, afford no sufficient marks

* See what Orræus calls the period of infection, in his Account of the Plague of Russia.

for

for characterizing different varieties of the plague, unless it can be shown that the general course of the disease is materially influenced by the absence or delayed appearance of such symptoms, which on perusing the account of different epidemics we do not find to be the case.

The first variety of the second form, according to the division I have adopted, is characterized by the buboes not appearing till the second or third day.

In this case the symptoms are generally more violent, and the prognosis worse, than when they appear on the first day of the complaint, which characterizes the second variety of this form; in the third, the eruption of buboes is among the first symptoms, in which case the febrile symptoms are for the most part still milder.

Many cases of the first of these varieties so much resemble some of the first form, that the difference consists almost solely in the appearance of buboes in the former; thus the first and second forms of the plague imperceptibly run into each other; but the symptoms

symptoms of the first variety of the second form are in general less severe.

The pulse generally continues pretty full and tolerably strong till the second day, during which, for the most part, it becomes weak, and sometimes intermitting. The peculiar dejection of countenance, with the muddiness of the eyes, which come on more early in the very worst cases, frequently supervene at this time. Irregular flushing, a sense of internal heat, pain about the præcordia, and incessant inquietude, at this period afford a very fatal prognosis; as in the first form, these symptoms often precede that diminution of temperature and cold dampness of the surface, which announce the patient's death to be inevitable, which is often however, after the appearance of these symptoms, at the distance of a day or two. After this however, although the heat of the body returns, the symptoms upon the whole gradually become worse. When the strength has not been greatly reduced by the vomiting and purging, a remission is often observed on the third day, but if the foregoing train of

symptoms

symptoms has previously occurred this remission is always fallacious, the disease returns with redoubled violence, while the powers of resisting it are enfeebled. The patient often survives to the fifth or sixth day or later, the remissions constantly becoming slighter, and the exacerbations more severe.

On the second or third day, sometimes later, buboes make their appearance, in general without bringing relief; carbuncles also frequently supervene with no better effect. This however is not uniformly the case; Chenot observes, that the eruption of buboes and carbuncles was often attended with an evident remission of the symptoms. In some epidemics, Waldshmidt* remarks, when the symptoms were most alarming, the appearance of buboes often saved the patient, but in others they were not followed by any remission.

In this variety the body is frequently covered with petechiæ or vibices, and the corpse often becomes black.

* See Haller's Disput. ad Hist. et Cur. Morb. Pert. vol. v.

The

The malignant train of symptoms just mentioned as appearing on the second day, sometimes do not supervene till a later period. At whatever time they occur, however, they almost always afford a fatal prognosis. In some favorable instances, especially where the vomiting and purging do not occur or at least not in such a degree as greatly to reduce the strength, the foregoing train of symptoms does not appear at all, and the patient escapes. In such cases the delirium or coma seldom comes on before the second night, and the remissions which take place in the morning are more considerable. These flattering appearances however often prove deceitful, and even a salutary sweat on the morning of the third day is sometimes succeeded by a fatal train of symptoms.

These sometimes do not appear till the fourth day, and the patient after their appearance frequently experiences a remission in the mornings; the exacerbations however gradually become more severe, and death is only delayed.

In this variety, death for the most part

happens on the fifth day, sometimes not till the sixth, seventh, or eighth, and then the symptoms are generally milder, and the buboes appear early on the second day. Few recover from this variety.

In the second variety of the second form of the plague, according to the division I have adopted, buboes appear on the first day. Here the symptoms are wonderfully varied. Many cases are equally fatal with those which have been considered, but this variety upon the whole is less so.

Dr. Russell observes of his fourth class, which corresponds to this variety, "The "fourth class was the most numerous of "all, comprehending those forms of the "disease, which from the various and sud- "den changes in their course so often "though not constantly met with, cannot "easily be represented in concise and con- "nected description; I therefore enter on the "attempt with diffidence, and as a supple- "ment for defects, must refer to the cases "themselves noted below. The distinctive "marks of this class are, the continuance "of the inflammatory and febrile symptoms "with

" with less interruption than in the former;
" a pulse more constantly sustained or soon
" recovering itself when sunk and hurried
" in the exacerbations; the length and ri-
" gour of the exacerbations decreasing in
" the advance of the disease; and above all,
" the prevalent tendency to a favorable cri-
" sis by the skin, with the critical sweats
" on the third, fifth, or subsequent days."

Vomiting is not so frequent a symptom in this variety as in the former, but upon the whole the first symptoms of these varieties are not very different. Some hours after the commencement, a bubo begins to shew itself, and now and then more than one. Notwithstanding this, the symptoms are sometimes as severe as in the foregoing variety; for the most part however they are milder.

The fever is more moderate; delirium or coma still more rarely appear on the first night, during which the patient is less restless and anxious. But from the state of the symptoms at the commencement, we cannot judge with certainty respecting the event, those often escaping in whom the

first symptoms are severe; whilst others, in whom the febrile symptoms are milder at an early period, are carried off after lingering for many days.

The remission on the second morning is generally considerable in this variety, and during the second day the symptoms often undergo many different changes; at one time the febrile symptoms running high, now and then even accompanied with a degree of coma, soon afterwards a very evident remission taking place, which in many cases is only a prelude to a new exacerbation.

These exacerbations are often followed by a sweat more or less general, and which is found in proportion as it is general to bring relief. The most general sweats commonly occur in the morning, and consequently the most evident remissions. At other times the sweats for the most part are partial, and the patient during the remissions, anxious and oppressed. The morning sweat of the third day often proves completely critical, or brings such relief that the patient remains free from danger.

These

These may be regarded as the most favorable cases of this variety; they seem to be the same which M. Chicoyneau describes in the following manner. If all those of the former class die, he observes, others might indulge more hope. The latter were seized at first with the same symptoms as the former, but they disappeared on the second or third day. Nature and art, he remarks, seemed equally to conduce to this happy effect; the former collected the poison which had been every where diffused through the system into the buboes and carbuncles, which suppurating, spreading, and throwing out the matter they contained, formed a kind outlet through which the pestilential virus flowed,* while art aided this evacuation, which always proved salutary when it was not neglected.†

But many cases of this variety are less favorable. The remission on the third day is but imperfect, and the exacerbation soon returns. If during this there be an evident

* It is almost unnecessary to warn the reader of the groundless nature of this hypothesis.

† See the observations of M. Chicoyneau, in the Traité de la Peste.

change in the state of the pulse, if from having been pretty full and strong it become weak and fluttering, the prognosis is bad. After this, the pulse varies in frequency, but seldom recovers its strength.

When the change in the pulse is less remarkable, however, the sweat which returns on the morning of the fourth day often brings more relief, and if the exacerbation on this day be less considerable, the sweating is more profuse and brings more relief on the fifth, and a third profuse sweat on the morning of the seventh day often completes or nearly completes the recovery. It has been remarked, that the sweats in this class of patients are more profuse and bring more relief on the mornings of the odd, than on those of the even, days.

All the patients who escape however do not recover in this way, but often very slowly, and without any sweat or with very little, the complaint gradually abates.

In the last variety of the second form of the plague, namely, where the eruption of buboes is among the first symptoms, many cases are attended with a considerable degree

gree of fever, sometimes protracted for six or eight days; but comparatively few are attended with much danger.

Chenot gives the following short account of his first division of the plague, which nearly corresponds with this variety, "Subinde vix ulla bubonis ortum præcedit "stipatve ægritudo. Ipse carbunculus non- "nunquam prodit, prævia tantum miti com- "motione febrili, manifestior tamen ple- "rumque est quam in bubone."

In this variety the patient is sometimes not even confined to the house, and very often not to bed. In short, the mildest cases of this variety almost resemble the last form of the plague, namely, that in which the eruptions are the only symptoms.

Such are the symptoms of the plague, and such the gradations by which the first form runs imperceptibly into the last, a disease as different from it as can be imagined.

Before leaving this part of the subject it is necessary to observe, that although most cases of the plague will be found referable to some of the foregoing heads, yet there are many anomalous cases which cannot be

arranged under any one description, as they differ from each other, as well as from all other cases. The only way of describing these is to give the cases themselves; this the reader will perceive would be endless.

Dr. Russell forms a separate class for such anomalous cases, without however attempting any general account of them; all he observes is, "This class being reserved "for such cases as were dubious, anoma- "lous, or extraordinary, varying more or "less in some material circumstances from "any of the foregoing classes, admits of "course of no general description. The "particular cases, to which have sometimes "been subjoined occasional remarks, may "be consulted agreeably to the references "made below to the journals."

An account of such cases would not only be tedious but of little use, since the anomalous cases of one epidemic are not always found to resemble those of another. All that can be done, is to warn the practitioner that anomalous appearances are to be looked for, which do not however seem materially to influence the mode of treatment.

SECT.

SECT. III.

Of the Causes of the Plague.

THE history of the plague is involved in much obscurity, so that it is impossible to say from what source, or where, it originated. The earliest plagues of which we have any account raged in Egypt and other parts of Africa.*

We are sufficiently acquainted with its history however to be assured, that like the other exanthemata it arises from a peculiar contagion. Professor Stoll of Vienna indeed, and some others, have combated this opinion, but it would be mispending time to trouble the reader either with the arguments of these writers, or any refutation of them, as they have scarcely now a single advocate.*

* See Waldshmidt's Treatise on the Plague, in the fifth volume of Haller's Disput. ad Morb. Hist. et Curat. Pert.

* See the Traité de la Peste, and Dr. Russell's work on the Plague.

It

It will be unnecessary here to make many observations on contagion, as this subject has already been considered at length. It is needless to repeat what has been said of the means of preventing the generation and checking the progress of contagious diseases; * and it would be tedious here to describe lazarettos and the various precautions employed to prevent the introduction of the plague from foreign countries; for these I shall refer the reader to the works of Mr. Howard and Dr. Russell.

Some facts would lead us to suppose that peculiar states of the air are favorable to the production of the plague; it has some-

* De Mertens recommends, as a good preventive, wearing a cloak of oiled cloth over the cloathes, while in the rooms of the sick. It has also been recommended to anoint the body with oil. De Mertens thinks issues not to be depended on. The reader will find, in his Treatise on the Plague of Moscow, formulæ for what have been termed antipestilential powders; they are similar to the fumigating powders mentioned in the first volume when speaking of the purification of fomites; the manner of using them also, is there pointed out.

times

times appeared in many parts of a country at the same time. * More generally however it appears at first in one place, and spreads gradually to others.

Like other contagious fevers, warm weather is generally favorable, and cold weather unfavorable, to its progress. The plague was greatly weakened, De Mertens informs us, while the thermometer stood between sixteen and twenty degrees below frost. It often happens however, that its violence is not checked by the winter, and there are many instances of the plague ceasing in the warmest seasons of the year. In all the plagues with which Aleppo has been visited during this century, the Rev. Mr. Dawes observes, it is said to have regularly and constantly ceased in August or September, the hottest months of the year.

Like other contagions, that of the plague is active only for a very short distance around the patient. The physicians, De Mertens observes, often went within

* See a Letter by the Rev. Mr. Dawes from Aleppo, in the third volume of the Medical Museum.

a foot of the patients, without being infected.

The young and robust, the same author observes, were more liable to infection than the old and infirm. It has often been remarked of the plague, as of most other contagious fevers, that infants are less liable to it than adults. Waldhsmidt saw several infants who sucked nurses ill of the plague, and yet escaped infection. He even observes, that one infant sucked two nurses ill of the plague, both of whom died, yet the child did not receive the disease. A woman who suckled her child five months old, was seized with the plague and died after a week's illness, but the child who sucked her and lay in the same bed with her, escaped the distemper. * De Mertens and others make the same observation.

It is remarkable, however, that the fœtus in utero sometimes receives the disease, and that even where the mother escapes. "Last "year as well as this, says Mr. Dawes, "there has been more than one instance of

* Mr. Dawes's letter.

"a

" a woman's being delivered of an infected " child with the plague sores on its body, " though the mother herself has been en- " tirely free from the distemper."*

It was observed of some of the other exanthemata, that certain constitutions are incapable of undergoing them; the same seems to be true of the plague. Waldshmidt knew a woman who was servant in a family where seven people died of the plague, and afterwards in another all of whom died of it, and yet remained uninfected. A Greek lad, Mr. Dawes observes, made it his business for many months to wait on the sick, and to wash, dress, and bury the dead, yet escaped the disease.

Those who have once had the plague are less subject to it than others. This circumstance, together with the success which had attended inoculation for the small-pox, induced some to recommend inoculating for the plague, which has actually been done. In Dr. Guthrie's Letter to Dr. Duncan there

* In pregnant women the plague generally produces abortion.

is

is an account of a surgeon, Mathias Degio, who inoculated himself for the plague. He inserted, with a lancet, under the cuticle of the arm, a little of the matter from a pestilential abscess. On the fourth day after inoculation the fever appeared; he treated himself in all respects in the same way as if he had been inoculated for the small-pox, paying particular attention to the cool regimen. His only medicines were cold water and vinegar, with a little wine. The complaint proved so mild that he was never confined to bed, but was generally in the open air. It was not a more severe complaint than the common inoculated small-pox.

This surgeon afterwards regularly attended an hospital allotted for the reception of patients under the plague, without feeling any symptom of the disorder; while most of the other surgeons fell a sacrifice to it. From one case however nothing conclusive can be drawn; besides, it is far from being uncommon for the plague to attack the same person a second or third time.

It appears from the foregoing case, that the

the contagion of plague produces the disease about four days after infection. De Mertens also observes, that the attendants on the sick generally fell ill about the fourth or fifth day, and Dr. Guthrie relates a case in which the patient sickened on the fourth day. Sometimes however its effects are much more sudden. Waldshmidt mentions the case of a person, who while he was drying some wet clothes which had been worn by a patient under the plague, was immediately seized with nausea and headach, and died on the sixth day, a bubo and other pestilential symptoms having made their appearance.

Brutes are incapable of receiving this disease, although, like other things which have been in contact with or near the sick, they are often the means of conveying the contagion from one person to another. It appears however from an instance alluded to in the Introduction, and some similar ones mentioned by Waldshmidt, that the contagion of the plague, if received into the stomach, often produces violent effects on brutes; a circumstance which affords a strong

strong argument against contagion, in casual infection, making its first attack on the stomach.

The contagion of the plague, like that of typhus, seems sometimes to act merely as a predisposing cause. When speaking of the latter, it was observed that the observations of Dr. Lind have proved that the contagion of typhus may sometimes lurk in the body and remain inactive for a considerable length of time, if the patient is not exposed to other causes of disease, which seem to subject the system to its action. De Mertens makes a similar observation with respect to the plague; many, he observes, were suddenly seized after a hearty meal, a fit of anger, or violent exercise.

It is of great importance to determine how long the contagion of plague will lurk in the human body, or in fomites while freely exposed to the air, and retain its activity, as this circumstance determines the duration of quarantine. Dr. Cullen thinks forty days longer than necessary for the quarantine of people; and with regard to that of goods, he is of opinion that were they

they properly unpacked and aired, the term of their quarantine might also be shortened.

"I suggested," Dr. Guthrie observes in his Letter to Dr. Duncan, "to Baron Ash, "physician general to the Russian army, a "doubt of the possibility that the very "active contagion of the plague could re- "main so long latent in the body, as the "quarantine of persons seems to imply, "and that it appeared to me to be founded "on an imperfect knowledge of the disease, "drawn from a period of ignorance or of "general consternation and terror. His "answer was, that he did not think that "the contagious nature of this violent dis- "ease could remain longer in the body "than fourteen days without declaring it- "self on, or before, that period, but that "from his own observation and experience "he could not take it upon him to say that it "could ~~not~~ be concealed so long. Such were "likewise the answers I received from the "other medical gentlemen whom I con- "sulted on the subject. Some gave a little "more latitude and some less, as it can

"only be a matter of opinion, but none "exceeded fourteen days."

It appears from different facts, above alluded to, that the plague generally appears as early as the fourth or fifth day after infection; but we do not know how long a person who has laboured under the disease is capable of infecting others, nor how long the contagion may lurk in an unfavorable habit without producing the disease, and may yet be communicated and excite the disease in habits more susceptible of the infection. Upon the whole we have reason to believe, that a quarantine of forty days is considerably longer than necessary for persons, and probably for goods also. Experience however has not yet determined how much of this term may be abated.

It appears from what was said above, that the plague at the commencement of the epidemic is very frequently uncharacterized by the proper pestilential symptoms; it has also been observed that at this period it is less contagious than at the height of the epidemic; a circumstance which further contributes

contributes towards a deception respecting its real nature.

But the most unaccountable circumstance respecting the contagion of the plague, and which has also been observed more or less strikingly of the contagion of other fevers, is, that it often suddenly and without any apparent cause ceases to produce the disease. The plague, says De Mertens, ceased at one time over the whole Russian empire, after having prevailed at Moscow and other places for a year and an half. "But a "greater difficulty," Dr. Russell observes, "than that of all persons not being suscep- "tible of infection, arises from the cessa- "tion of the plague at a period when the "supposed contagious effluvia preserved in "apparel, furniture, and other fomites, at "the end of a pestilential season, must be "allowed not only to exist in a much "greater quantity than can be supposed to "be at once accidently imported by com- "merce, but in a state also of universal "dispersion over the city. The fact, how- "ever unaccountable, is unquestionably "certain, the disease seems to be extinguished "by some cause or causes equally un-

" known as those which concurred to ren-
" der it more or less epidemical in its ad-
" vance and at its height. In Europe
" something may be ascribed to the means
" employed for the cleansing of houses and
" goods supposed liable to retain the latent
" seeds of infection. But at Aleppo, where
" the distemper is left to take its natural
" course, and few or no means of purifi-
" cation are employed, it pursues nearly the
" same progress in different years. It de-
" clines and revives in certain seasons, and
" at length, without the interference of
" human aid, ceases entirely." " Ubi pes-
" tis nondum penitus extincta fuit," says Waldshmidt, " hæc sua sponte præter om-
" nium expectationem ita cessavit, ut ne
" vestigium quidem ejus postea apparuerit.,' Nor was any one infected by another, he adds, although the latter still had the pestilential buboes about him, while articles which had been in contact with the sick entirely lost the power of communicating the disease.

The plague is generally most fatal at the beginning of the epidemic.

It

It is remarkable that the convalescents from the plague have the venereal appetite unusually strong, a circumstance which often counteracts the endeavours of the magistrate, and tends to spread the distemper. The same thing has been observed respecting other malignant fevers. It is particularly remarked by Dr. Rush of the late dreadful fever of North America.

SECT. IV.

Of the Treatment of the Plague.

"In the cure of the plague," Dr. Cullen justly remarks, "the indications are the "same as those of fever in general." I therefore refer the reader to what was said of the treatment of continued fever, and shall now only make a few additional remarks particularly applicable to the plague.

In the first place, of blood-letting in this complaint. It is a remark of Sydenham, that blood should be let if the physician see the patient before any appearance of a bubo. This maxim, although very different from

that which seems warranted by experience, is, notwithstanding, the result of observation; for it is in those cases where buboes do not appear or are delayed to a late period, that the inflammatory symptoms most frequently run high.

Many, particularly the Asiatics, make it a rule to let blood in all cases of the plague, if they see the patient at an early period; and some recommend it as late as the fourth, fifth, sixth, or seventh day, and even some European practitioners have gone nearly as far. Dr. Alexander Russell in his Natural History of Aleppo observes, "It seemed to "me that very plentiful bleeding at the first "appearance of the disease was of great "service." Others run to the opposite, but safer extreme, and declare that blood-letting is hurtful in all cases of the plague. The proper mode of practice seems to lie between these extremes.

The reader will find many declaring that, in the cases of plague which fell under their observation, they could not perceive that a small blood-letting at the commencement did harm. But although this were true, is it

it sufficient to recommend a remedy, that it does no harm? The truth seems to be, that the general prejudice has always been in favour of blood-letting, and no physician's experience has been sufficiently extensive to ascertain its hurtful tendency, unless in cases where the injury done by it is very apparent, and almost constantly follows its employment.

But if there are other cases in which blood-letting has never been attended with any sensible advantage, and which nearly resemble the fevers in which it has been found hurtful, we surely have every reason in such cases to believe it improper.

It is in vain to ask what advantage is expected from blood-letting in these cases; authors seem to have assumed it as an axiom, that if blood-letting is not evidently hurtful, it must be beneficial in this complaint; and all that they seem anxious about is to adduce cases and arguments in support of its innocence.

Nor can there be any thing more fallacious than the arguments employed to prove the innocence of this practice. This the

reader will readily perceive, if he ask himself, what are the consequences of blood-letting to be dreaded in the plague? what are its consequences when it evidently does harm? They are, the symptoms indicating a general loss of tone, the pulse sinks, instead of the febrile heat a cold damp spreads over the body, which is often the forerunner of death. But these are the unfavorable train of symptoms to be expected in all the more alarming forms of the plague, and in different cases they supervene at different periods. How extensive then must that experience be, which has ascertained that in any one case blood-letting has not hurried on these symptoms, nay has not occasioned them, where they would not otherwise have appeared. Is it from reviewing the result in eight or ten cases, in half of which blood-letting was, and in the other half was not employed, and observing the course of all nearly the same, that the safety of so important a step is to be determined?

Besides, if such observations prove any thing, they prove that blood-letting in the plague

plague does neither good nor harm, and ought therefore to be laid aside as an useless remedy; a conclusion very different indeed from the result of our experience in similar cases, and not to be admitted except of blood-lettings so trifling that neither good nor harm could be expected from them, and which do not therefore deserve the name. Many of the Turks indeed employ local instead of general blood-letting, and in the latter they generally draw much less blood than we are accustomed to do; a circumstance which has probably contributed much to establish the safety of blood-letting in the plague.

"Upon finding the pulse sink so sud-
"denly after bleeding," an author I have frequently had occasion to mention observes, "I was at first inclined to attribute
"it to that evacuation, and to suspect in less
"plethoric habits bleeding must prove still
"more prejudicial; but I afterwards found
"the low state inseparable from certain
"forms of the disease, and often could ob-
"serve no material difference in its progress
"in cases where blood-letting had or had

"not

" not been omitted." The author in this quotation confesses that the symptoms of debility were those which he dreaded, and also those to be feared from the remedy he employed, without informing us of any advantage to be expected from it, to counterbalance the risk.

The more we study the observations of the original writers, the more reason we shall find for believing, that the employment of blood-letting in the plague is to be regulated by the same maxims as in other idiopathic fevers. " The measures," says Dr. Cullen, " for moderating the violence of " reaction, which operate by diminishing " the action of the heart and arteries, have " seldom any place here, except so far as " the antiphlogistic regimen is generally " proper. Some physicians indeed have re- " commended bleeding, and there may oc- " cur cases in which bleeding may be use- " ful; but for the most part it is unneces- " sary, and in many cases hurtful."

An opinion has prevailed, as respecting the other exanthemata, that blood-letting is apt to repel the eruption, which it is feared might

might be attended with bad consequences. Dr. Russell thought that in one case blood-letting had this effect. Direct experience is not sufficiently extensive and accurate to decide the question, whether blood-letting, if otherwise indicated, should be delayed when an eruption is expected; if we admit of inference from analogy, it is easily answered.

We are led from analogy to believe that emetics may often be useful at the commencement of the plague, and they have sometimes been employed with advantage. "Vomiting," Dr. Alexander Russell,* observes, "was also of the utmost conse-"quence at the beginning." "The mode "of treatment," says Dr. Guthrie, "which "the Russian physicians found the most "successful in the plague was, beginning "with a vomit on the appearance of the "first symptoms, and working it off with "acid drinks. If the nausea and bitter "taste in the mouth were not relieved by "the first, they gave a second and some-

* See his Natural History of Aleppo.

"times

"times a third and fourth; nay if the "symptoms were very urgent, they gave "two or three in the space of twelve "hours, as there is no time to be lost in "this disease; for they did not find this "evacuation subject to the same objections "as brisk purges, which a man in the plague "is unable to support." Dr. Patrick Russell also approves of emetics at the commencement, although the prejudice of the Asiatics against them, prevented his employing them at an early period.

We have reason to believe, that in the progress of the disease they will seldom be of much service, unless when necessary for evacuating offending matter; and by their debilitating effects they may do much harm. When retching occurs without vomiting, an emetic is often serviceable. When it fails to allay this symptom, opiates generally succeed.

There can be no doubt of the propriety of opiates for the purpose of allaying restlessness and procuring sleep in all cases where the excitement is not considerable.

Dr.

Dr. Patrick Russell says he never saw them produce coma.

From what we observe in similar fevers, we should a priori believe, that much purging would prove pernicious in the plague; but that gentle laxatives or clysters, sufficient to keep the body regular, would be found indispensible; and a great part of this inference has been confirmed by experience.

Almost all physicians who have practised in the plague agree, that much purging is hurtful; but I have already had occasion to observe, that costiveness appears to be less pernicious than we should have expected. A spontaneous diarrhœa in the plague is always a dangerous symptom; on this account, in those places where the disease is frequent, there is the utmost dread of any means which tend to induce this symptom; and this often proves an obstacle to the exhibition of any laxative or clyster however mild.

Suppositories are much used in Eastern countries, but even these are avoided in the plague, so that the patient often remains costive

costive for a long time, and it is said without suffering from it.

We may say of this, as of blood-letting, that in a complaint the symptoms of which are so varied, it requires much experience to determine the effects of any mode of practice. But we have a double reason for drawing our conclusionc autiously, when the measures which appear safe have in similar cases been found pernicious. Besides, although the common inconveniences of costiveness be less felt in this complaint than in many others, it seems often to occasion an accumulation of irritating matter in the intestines, which sometimes induces the very symptom which we are endeavouring to prevent. Clysters or suppositories, as they are less apt to occasion diarrhœa, are preferable to cathartics taken by the mouth.

When diarrhœa does occur, whether spontaneously or from the use of cathartics, it is for the most part readily checked by opiates at the commencement of the disease; but in the advanced stages, opiates, astringents, and every other means we can employ, often fail to relieve this symptom, and then the prognosis is fatal.

"From

"From some principles with respect to "fever in general," Dr. Cullen observes, "and with respect to the plague in particu- "lar, I am of opinion, that after the exhi- "bition of the first vomit, the body should "be disposed to sweat, which ought to be "raised to a moderate degree only, but "continued at least twenty-four hours or "longer, if the patient bears it easily."

We found in enumerating the symptoms of the plague, that spontaneous sweating is often attended with the best effects, and sometimes proves completely critical. There is however in most fevers a wide difference between the effects of spontaneous sweating and that produced by art, and we have reason to believe that the observations made on this subject, when speaking of continued fever, are applicable to the plague.

It has not been determined whether antimonial diaphoretics are useful in the plague. Dr. Russell thinks that, combined with opium, they promise to be serviceable.

Little is to be expected from valerian, contrayerva, bezoar, and other similar articles,

cles, regarded as diaphoretics, which have been celebrated in this complaint. Nor is much to be expected from camphire, which has also been particularly recommended.

A method of promoting sweat however, very different from those employed in ordinary cases of fever, has lately been attended, it is said, with very great success. It was proposed by Mr. Baldwin, the British agent and consul general at Alexandria, in Egypt, and has been made known to the public by a small Treatise in the Italian language by Count Bertchtold; the following extract from which has been translated into different languages and circulated throughout Europe.

"The directions are simply these: immediately after a person is perceived to be infected with the plague he must be taken into a close room, and over a brazier of hot coals, with a clean sponge dipped in warm olive oil, his body must be very briskly rubbed all over, for the purpose of producing a profuse sweat. During the friction, sugar and juniper berries must be burnt in the fire, which raise a

"dense

" dense and hot smoke that contributes to " the effect.

" The friction ought not to be continued " more than four minutes, and a pint of oil " is enough to be used at each time.

" In general, the first rubbing is followed " by a very copious perspiration ; but should " it fail of this effect, the operation may be " repeated, first wiping the body with a " warm dry cloth ; and in order still farther " to promote perspiration, the patient may " take any warm sudorific drink, such as " elder-flower tea, &c. It is not necessary " to touch the eyes ; and other tender parts " of the body may be rubbed more gently.

" Every possible precaution must be " made use of to prevent the patient taking " cold, such as keeping covered those " parts of the body not directly under the " operation ; nor must the linen be changed " till the perspiration has entirely subsided.

" The operation should be repeated once " a day, until evident symptoms of recovery " begin to appear. If there are already " tumours on the body, they should be " gently and more frequently rubbed, till

" they appear to be in a state of suppura-
" tion, when they may be dressed with the
" usual plaisters.

" The operation ought to be begun on
" the first appearance of the symptoms of
" the disease; if neglected till the nerves
" and the mass of blood are affected, or a
" diarrhœa has commenced, little hopes
" can be entertained of cure; but still the
" patient should not be despaired of, as,
" by an assiduous application of the means
" proposed, some few have recovered even
" after diarrhœa had commenced.

" During the first four or five days the
" patient must observe a very abstemious
" diet; the author allows only a small quan-
" tity of vermicelli, simply boiled in water.
" Nor must any thing be taken for the space
" of 30 or 40 days, except very light food;
" as, he says, an indigestion in any stage of
" the disorder might be extremely dan-
" gerous. He does not allow the use of
" wine till the expiration of forty days.

" There is no instance of the person rub-
" bing a patient having taken the infection.
" He should previously anoint himself all

" over

" over with oil, and must avoid receiving " the breath of the infected person into his " mouth and nostrils. The prevention to " be used, in all circumstances, is that of " carefully anointing the body, and living " upon light and easily digestible food."

Mr. Baldwin observes, that among upwards of a million of people who died of the plague in Upper and Lower Egypt, during the space of four years, he could not discover a single oil-man or dealer in oil.

With respect to diet there is nothing to be added to what was said when speaking of continued fever. While the synocha lasts it must be light and diluent, being rendered more stimulant and nourishing in proportion as the fever assumes the form of typhus. At all periods of the complaint acids and acidulous fruits are serviceable, and while the synocha lasts other refrigerants should be employed. Nitre in particular has been much recommended.

I may here also refer to the treatment of continued fever, for what was said respecting temperature and ventilation, and likewise respecting the use of bark, wine, and

the other medicines termed tonic. Although it has not been customary to employ the latter medicines very freely in the plague, we have reason to believe that they should be had recourse to, as early as the degree of excitement admits of, and, after the typhus has commenced, employed with the same freedom as in other cases of this fever.

Nor is any thing further to be said of the use of blisters and rubefacients.

The buboes and carbuncles generally require some treatment, but this part of the subject belongs to the province of surgery.

CHAP. VI.

Of the Urticaria.

THE Urticaria or Nettle-rash is defined by Dr. Cullen,

"Febris amphimerina.* Die secundo "rubores

* The term amphimerina is generally used to express a fever, which returns daily and is always finished within the day, so that it is a quotidian intermittent.

The

" rubores maculosi urticarum puncturas re-
" ferentes, interdiu fere evanescentes, ves-
" pere cum febre redeuntes, et post paucos
" dies in squamulas minutissimas abeuntes."

SECT. I.

Of the Symptoms of the Urticaria.

Dr. Cullen remarks, that he gives the character of the nettle-rash rather from the accounts of others than from his own observation, as he has seldom seen the disease, and never a single case of it in which it run the course described in his definition.

Sydenham considers it a species of erysipelas, and describes it to be a slight fever, soon followed by an eruption of small pustules over the whole body, resembling the appearance produced by the stinging of nettles. Vogel* regards it as characteristic of this eruption that it comes out when the skin is exposed to cold, and disappears when it is kept warm.

The term however has not always been employed in precisely the same sense.

* Vogel's Prælect. Acad. de Cog. &c.

Small

Small vesicles filled with matter are sometimes formed on the tops of the pustules, or, as Eller * observes, without any matter forming in the pustules the cuticle breaks, which gives a roughness to the parts occupied by the eruption. This eruption is attended with intolerable itching, and when it disappears, scratching is apt to renew it.

It appears most frequently, Burserius† and Vogel observe, on the face, neck, and arms. Before the appearance of the eruption, the former author remarks, an increase of debility and some anxiety are frequently observed.

The eruption generally appears after the fever has lasted a few hours, and for the most part relieves it. It is said in the definition, that the eruption generally disappears in the day time, but according to Burserius it sometimes remains out for two or three days.

Such are the symptoms of the urticaria

* De Cog. et Cur. Morb.

† Institut. Med. Pract.

which

which do not require to be considered at greater length. The complaint is seldom met with,* and is usually so trifling as to require no medical assistance.

Dr. Heberden† describes an eruption similar to that of the urticaria, which was unattended by fever. Burserius regards the essera of authors as a species of urticaria. It only differs from it in the pustules being generally larger and not itchy.

SECT. II.

Of the Causes of the Urticaria.

LITTLE has been determined concerning the causes of this complaint. We have reason to believe it, like many other eruptive fevers, connected with the state of the primæ viæ. Sydenham observes, that it occurs at all seasons of the year, and seems often produced by too free an use of thin wines or other similar liquors. Burserius says, he has seen it arise from irritating matter in the stomach, or from the perspi-

* Vogel says it is not uncommon about Gottingen.

† See the first volume of the Medical Transactions.

ration

ration being checked; so that it is doubtful whether it be properly arranged among the exanthemata, from which it also differs in not being contagious. It however, seldom if ever, appears as a symptomatic affection, and in one species of it at least, that described in Dr. Cullen's definition, it is always preceded by fever.

SECT. III.

Of the Treatment of the Urticaria.

With regard to the treatment of this complaint, if it arises from impurities of the primæ viæ, these must be cleared. When this is not the case, it generally requires only a gentle laxative to prevent the irritation of retained fæces; or if any thing else be necessary, the treatment is the same as in synocha. Vogel says of the essera that the retrocession of the eruption is not attended with danger.

END OF THE SECOND VOLUME.

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